



MARKED

School Grades and the Quantified Life

Noëlle Rohde

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Marked

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Noëlle Rohde



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For Brigitte

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Foreword

What does it mean to be quantified? To answer this question, Noëlle Rohde focuses on school marks or grades, a strategic choice given that grades represent one of the oldest forms of datafication and are found across the globe. The power of numbers certainly looms large in the German education system, where secondary school students receive over a hundred marks a year. In the disadvantaged comprehensive school studied by Rohde, moreover, these marks can make the difference between gaining access to university or ending up as low-skilled labour. The students themselves are keenly aware of the power of quantification, such as when one student says of his teacher that ‘She can disassemble you. She can make you into a tramp’. The primary weapon of this teacher being, obviously, the marks that are attached to tests and exams, and by extension to the students.

Rohde’s monograph *Marked* offers important insights into the tensions between quantitative grading systems and learning practices. But whereas previous studies have tended to look at the role of teachers in giving marks, this book zooms in on the experiences of the students who find themselves at the receiving end. Through attentive observations of classroom situations and in-depth conversations with students (and their teachers), we get to see how school grades shape the learning experience, how they affect students’ motivation as well as their attitude towards school and the world beyond. It finds that being measured and ranked through numbers does not just produce despondency among ‘poor performers’, it also awkwardly marks the ‘high achievers’ by separating them out from the rest, while making those in the middle invisible. As we hear students express how it feels to be disciplined through grades, and how their visibility limits and defines them, the book illustrates and theorises the lived experience of power. Ultimately, it shows that quantified marking regimes contribute to a feeling among students that they are mere cogs in a capitalist system that is not fit for purpose and that drains them of the curiosity and spark they had when they were younger.

By looking at the power of school grades, Rohde allows us to see what it means to lead quantified lives. We are all familiar with and even complicit in the quantification of modern life. By signing up to exercise apps that count the number of steps we take, by creating profile pages on Google Scholar that track our citations, or by consulting Tripadvisor or Booking.com ratings when deciding where to eat or sleep, we submit ourselves to regimes of quantification. We do not do so passively, of course. We are often able to retain a critical attitude to rankings and

when possible, we might even manipulate the numbers by which we are known. A useful illustration here is Caroline McLoughlin's study of devoted amateur marathon runners who are 'playing with numbers', for example by dropping out of a race to thereby avoid that a poor finishing time will blemish their record (2010). The students in Rohde's monograph show at least as much ingenuity in trying to make the numbers work for them. They developed strategies to ensure 'maximum output with minimal input' and became skilled at hiding their marks from other students and their parents. And they displayed critical attitudes by mocking what their marks supposedly say about them or by downplaying the relevance of school in comparison to their other experiences and activities. Even so, they realise that they cannot escape the quantified regime of the education system and cannot fully undo the effect it has on their lives.

Schooling offers an especially rich environment for studying quantification, as it reveals not only how learning is affected by numbered grading systems, but also how young people become schooled into our quantified modernity. This is valuable because quantification has become so widespread that it is difficult to imagine an outside or a before. Rohde's monograph transports us to the time in people's life when being numbered is only just becoming a reality, to the world of school children as they are subjected to systems of classification, of ranking, and evaluation. Here, a brief comparison with another encounter with numbers may prove instructive. The Wari of Amazonia studied by Aparecida Vilaça (2021) speak a language that has no words for numbers larger than two, thus requiring people to resort to description and analogy to convey larger quantities. For their children this creates a challenge when they enrol in state education. They easily memorise the Portuguese words for numbers, but struggle to conceptualise and apply them. These difficulties underscore that enumeration depends on forms of abstraction, objectification, and separation, a way of thinking that unavoidably distorts that which is quantified. Crucially, it disrupts a relational understanding of the world, of life as complexly entangled. The students in Rohde's comprehensive school are obviously already familiar with numbers but still struggle with their expansive use in schools. As marks are applied to their efforts, they start to feel detached from it, and as they are being 'marked' as quantified subjects, they experience a sense of alienation that fosters competitive and strategic behaviours.

It is obviously not in the power of this book – or any other book, for that matter – to turn the tide of quantification. But what it achieves is eminently valuable. By making visible and tangible what it means to be quantified, Rohde encourages us to think of less reductive and less objectifying forms of assessment and evaluation. Because ultimately, it should be possible to appreciate students' learning efforts, while preserving their creativity, interest, and engagement. This, it appears to me, is especially important at this very moment in time, one in which quantification, computation, and datafication threaten to shrink our world beyond recognition.

Mathijs Pelkmans, Series Editor,
LSE Monographs on Social Anthropology

About the series

The LSE Monographs on Social Anthropology series was founded in 1940 and has since published over 80 volumes including classic works by Edmund Leach, Raymond Firth, Alfred Gell, Lucy Mair, Fredrik Barth, Maurice Bloch, Henrietta Moore, Peter van der Veer and Yunxiang Yan, among other well-known figures. As one of the most prestigious series in the discipline of Anthropology, the LSE Monographs on Social Anthropology series continues to build on its history with both theoretical and ethnographic studies of the contemporary world through presenting scholarly work from all branches of Social Anthropology. In 2024, the series moved to LSE Press, and all titles in the series published by them are fully open access.

About the author

Noëlle Rohde is a social anthropologist with a philosophy background and an interest in the social dimension of numbers. She earned her doctorate from the University of Oxford where her thesis on grading in Germany won the Professor David Parkin Prize for the use of ethnographic methods. Besides quantification, Noëlle Rohde's academic interests are technology ethics, epistemology, and critiques of meritocracy. She currently holds a postdoctoral scholarship at Paderborn University where she investigates quantification in sports.

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No artificial intelligence tools were used at any stage of writing this book.

Ethics approval

The research underpinning this work was examined and approved by the University of Oxford's Central University Research Ethics Committee (CUREC) and the School of Anthropology and Museum Ethnography Research Ethics Committee (SAME REC) under the reference number SAME_C1A_19_004.

Introduction

Travellers punch differently coloured smileys on a display to indicate their satisfaction with the airport security procedure. A call-centre employee asks a customer: 'Would you please hold the line to rate me?' An academic consults the impact factor and citation metrics of a journal before deciding to submit an article. An ad for virility states that the majority of study participants achieved a favourable result with the supplement in question, based on the Erection Hardness Score (EHS). At a work lunch, colleagues retrieve their smartphones to compare how many steps they took the previous day. Denmark ranks above Italy in the World Happiness Report. A scholarly article in psychology demonstrates the adverse effects of smartphone use by measuring the participants' performance in relation to a 'boredom proneness scale'. A YouTube video with millions of views claims that drowning is equally painful as punching a wall, according to the pain metric DOL. A national football coach defends himself by showing that his team tactically sprinted forwards by 22% more.

This is a book about quantification, the act of transforming some kind of quality into a measurable size, a quantity (Ritter and Gründer 1989). Spanning the range from basic counting to big data analysis, from bookkeeping to architecture, quantification is a key pillar of human life. More specifically, however, this is a book about *social* quantification, that is, the numerical expression of human behaviour, performance, or characteristics. The past decades have seen a veritable explosion of such 'social' numbers, to which the impressionistic selection of examples above attests. One of the most striking cases is perhaps one still waiting in the wings.

In a series of regional pilot studies, the Chinese government has been trialling so-called 'social credit systems' since 2015. Despite some degree of diversity among local variants, all systems are founded on the same basic idea: measuring not only citizens' creditworthiness, but also their general 'trustworthiness' (Kostka 2019). Data collected both from official and online sources is aggregated to yield an overall social credit score for each individual – a score which allows for categorisation from AAA to D or from 'excellent' to 'poor'. People can improve their ratings, for example, by winning awards, engaging in volunteer activities or 'acts of heroism', by returning found money or in some cases even by tipping off public security departments. On the other hand, points are deducted for cheating on tests,

jaywalking, failing to care sufficiently for the elderly, being behind on electricity bills or loan repayments, and spreading ‘misinformation’ online (Liang and Chen 2022). In most social credit systems, the score is linked to reward or punishment. AAA citizens can claim discounts for parking, public transport or gyms, and may receive deposit waivers for libraries and hospitals. In some local systems, healthcare benefits are offered, as well as lower interest rates, tax reductions, and priority processing in administrative applications (Liang and Chen 2022). People on the other end of the spectrum face a range of sanctions. ‘Poor’ or C citizens are not to be offered awards from local governments and are prohibited from working in public institutions. D citizens are targeted with higher interest rates, may be banned from buying plane or high-speed train tickets, and their children are not allowed to attend private schools (Creemers 2018; Mau 2019).

For some time, it seemed as though social credit scoring could only be put into place by an authoritarian government. Evidence now suggests, however, that there is substantial political interest in seeing it realised in Western democracies too. The former German Education Minister Anja Karliczek and French President Emmanuel Macron met the Chinese Head of State Xi Jinping in 2019 to underline the European Union’s interest in China as a partner in digital innovation (BMBF 2019). A year later, and under Karliczek’s patronage, the German Ministry of Education and Research published a foresight study in which it considers it a thinkable scenario that the German government will introduce a ‘bonus-point system’, in many ways resembling the Chinese blueprint, by 2030. Citizens would be able to collect points for actions deemed socially desirable, such as voluntary work or organ donation, and could trade them in for a range of advantages, for instance privileged admission to certain university courses (BMBF 2020c, p. 123). In 2022, the first bonus point system pilot was rolled out on European turf, in the city of Bologna, Italy, and comparable dynamics are observable in Austria and Greece (Fess 2022a, 2022b). In times when more and more areas of human life are subjected to quantification, an important and yet neglected question to ask is what numbers do to those on the receiving end. What are the effects of numbers on the individual – in short, what does it mean to be quantified? That is the question to which this book is dedicated.

Social credit scoring has received international attention from newspapers, academics, and NGOs, but also in the form of documentaries and films. What many of the commentaries have in common is that they convey a distinctly dystopian sentiment, creating the impression that what we have before us is a vexingly new phenomenon. In an early response to the Chinese experiments, *Wired* magazine made them the topic of their December 2017 title page, accompanied by the words: ‘Imagine a future where your life is measured by a number – three digits that dictate your place in society. That future is now.’ It is indeed tempting to think of the quantification of human life as tied to digitalisation and datafication in the algorithmic age. The premise of this book, however, is that the ‘current future’ which the *Wired* magazine paints, may

not be quite as novel as it appears. In fact, to understand what it means to be quantified, we can look to a technology which dates back to the 16th century and has since conquered the whole world: the school grade.

Of course academic grades are not as all-encompassing as Orwellian social credit scores, and yet both metrics share principal features. They quantify human life, they are intimately personal, and decisive for the individual. In most school systems worldwide, grades are the unrivalled indicator of educational success, occupying a pivotal role in the lives of billions of young people, with far-reaching consequences for their paths of life. The present work is based on 12 months of ethnographic fieldwork in a German comprehensive school – a context in which students are incessantly quantified, receiving between 100 and 120 grades per year (on a scale from 1 down to 6), and in which every single day of school ‘counts’. By spending a whole year in school with the research participants and making extensive use of qualitative interviews, I sought to understand how these students navigate a context in which there exists a direct, compulsory, and consequential relation between them and their numbers. An ethnography of the school grade offers profound insights into the effects of quantification on those to whom it is applied. By turning the attention to the bearers of numbers, this work seeks to contribute a new angle to a field of research that is itself still emerging – for even if quantification has a long legacy, the investigation of its social dimension is a fairly recent development.

(Social) Quantification and its research

Derived from Latin, the term ‘quantification’ is based on two distinct words: *quantitas*, meaning greatness or extent (Lewis and Short 1879b) or ‘being-how-great’ (Brugger and Schöndorf 2010, p. 383), and *facere*, meaning to render or to make (Lewis and Short 1879a). Thus, freely translated, to quantify means to ascribe a certain extent or greatness to something. What this brief etymological exercise reveals is that quantification is a practice of a truly vast scope.

Archaeologists argue that the oldest signs of number use and a sense of quantity are to be found on a Wolf bone dating back to 30,000 BC, which appears to bear tally marks (Everett 2017, p. 36). A somewhat more intricate artefact is the so-called ‘Ishango Bone’ from 20,000 BC, exhibiting interesting groups of notches which experts interpret as evidence of counting and a number system (Barrow 1992, p. 32). There is now strong support for the theory that numbers and counting are not ‘natural’ but rather the result of a cultural development. As the evolutionary anthropologist Caleb Everett puts it in *Numbers and the Making of Us*:

Some seemingly basic mathematical concepts are not wired into the human condition [...] And if they are learned rather than inherited genetically, then it follows that they are not a component of the human

mental hardware but are very much part of our mental software – the feature of an app we ourselves have developed (2017, p. 125).

The theory that numbers, and thus systematic quantification, are ‘revolutionary and invented conceptual tools’ (Everett 2017, p. 7) is bolstered by the fact that, to this day, there exist a few anumeric peoples, such as the Amazonian Pirahã, who cannot count beyond three or not at all (Barrow 1992, p. 34; Everett 2017, p. 120). What is more, it has been shown in infant studies that humans are not capable of distinguishing and understanding quantities beyond three without a number system (Everett 2017, p. 24). Therefore, while there seems to be some inborn inclination for basic quantification, the form in which we employ it today was likely invented in a ‘few great centres’ (Barrow 1992, p. 33) and spread around the world from there. Everett argues that distinguishing quantities with the help of numbers was the ‘flintstone that ignited the human timeline’ (Everett 2017, p. 211). The invention of quantification was required for the agricultural revolution with its calendars and calculations of cycles and seasons, as well as the industrial revolution (Everett 2017, p. 222). One might add that the current digital revolution too, would have been downright unthinkable without quantification.

Today, we engage with quantification and its products on a daily basis. Starting with the first look at a clock in the morning (and thus the quantification of time), and endless list of further examples could be compiled to show that our lives are steeped in this practice. Quantification not only accompanies us from dusk till dawn, but, especially the younger generations, also from the womb to the tomb. The ‘datafied child’ comes into existence with the very first *in utero* scans, and there are thousands of apps available with which pregnant women can track the development of the foetus (Lupton and Williamson 2017). Given the long history and ubiquity of quantification, social science has shown a remarkable lack of attention to the phenomenon and has begun only lately to catch up. Peter Miller, an influential figure in accounting studies, observes that calculative practices were almost missed by scholars because they were seen as ‘neutral’ (2001, p. 382). This view began to change with the publication of a now considered classic book in 1995, *Trust in Numbers*. The author Theodore Porter, a historian of science, places particular stress on the epistemic nature of numbers and argues that they are closely associated with the notion of objectivity and that their use is often indicative of a positivist orientation (Porter 1995, pp. 17,32). Porter cautions, however, that numbers do not equal access to truth but that they are rather constructed entities which confer to their makers social and technological power.

Further conceptual groundwork which has profoundly influenced today’s research on social quantification was carried out by Wendy Espeland and Mitchell Stevens. The US sociologists introduced an important distinction between ‘numbers that mark’ and ‘numbers that commensurate’. The former are used simply to name or label, but do not carry any mathematical meaning.

Examples are telephone numbers, postcodes, or the numbers on football players' shirts (Espeland and Stevens 2008, p. 407). The other type of number hinges on what Espeland and Stevens refer to as commensuration:

Commensuration [means] the valuation or measuring of different objects with a common metric [...] Commensuration creates a specific type of relationship among objects. It transforms all difference into a quantity. In doing so it unites objects by encompassing them under a shared cognitive system. At the same time, it also distinguishes objects by assigning to each one a precise amount of something that is measurably different from, or equal to, all others. Difference or similarity is expressed as magnitude, as an interval on a metric, a precise matter of more or less (2008, p. 408).

In other words, quantification as commensuration always operates on the basis of a scale or spectrum alongside which entities can be placed. This more narrowly understood, but also 'most consequential' (Espeland and Stevens 2008, p. 408) use of quantification needs at least an ordinal level of measurement, but does not rely on being expressed in numbers. The products of commensurative quantification can equally be presented as letters (think of grades from A to F or credit ratings such as AAA), smileys, different types of metals (bronze, silver, gold), or even by arranging entities physically such as in the case of a winners' podium. Much of current quantification research, including my own in this book, is concerned with the commensurative type of quantification.

Despite its relatively recent advent, work on the social dynamics of quantification has truly blossomed in the past two decades. The field is characterised by a great variety of disciplines, including accounting, history of science, sociology, statistics, business, science and technology studies, geography, and anthropology. Also the range of case studies is extremely broad. Seminal work has, for instance, been carried out on metrics in global health (Adams 2016), rankings (Espeland and Sauder 2016; Ringel et al. 2021), the quantification of academics and their work (Mills et al. 2023; Pardo-Guerra 2022), practices of self-tracking (Lupton 2016), accounting (Mennicken and Vollmer 2007), audit cultures (Strathern 2000a), and statistical modelling (Didier 2020; Saltelli and Di Fiore 2023). The formation of a common identity for this field of inquiry has been greatly aided by the publication of two review articles (Berman and Hirschman 2018; Mennicken and Espeland 2019), and by the foundation of the Society for the Social Study of Quantification (SSSQ) in 2019, which brings together like-minded researchers in seminars and conferences. The wealth of insights unearthed thus far is impossible to summarise here, but even a small sample conveys a sense of the advances made. Scholars have, for example, shown that numbers make strong claims to objectivity and truth (Newfield, Alexandrova, and John 2022; Porter 1995), that they can dominate decision-making processes (Denis, Langley, and Rouleau 2006; O'Mahony 2017), and determine who or what becomes visible (Mennicken and Espeland

2019). Quantification also assists the creation of the responsible, calculating individual (Miller 2001; Vormbusch 2012), and can alter the reality it purports to represent (Espeland and Sauder 2016). The newest development in the field is the push for a better understanding of the moral dimension of quantification. An ‘Ethics of Quantification’ was already called for in 2008 by Espeland and Stevens, and the call was recently renewed – partly triggered by critiques of number-driven COVID-19 policy. A group of eminent scholars, including Andrea Saltelli, Wendy Espeland, Theodore Porter, and Emmanuel Didier, have urged for the development of a framework that addresses and makes sense of moral issues around quantification (Saltelli et al. 2020).

Despite the remarkable progress achieved in the social study of quantification, a prominent lacuna can be discerned in the existing body of work. Most of the research focuses either on the societal or institutional effects of quantification. What is less well understood is how numbers affect the *individual*, the person who is quantified. A possible explanation for this might be the relative scarcity of ethnographic research on quantification. Ethnography, with its immersive approach and the continuous presence of the researcher in the chosen fieldsite, allows the focus to be shifted to lived experience and therefore to the individual’s point of view.

This book pursues the question ‘what does it mean to be quantified?’ through an ethnography of the school grade. Besides a deeper understanding of the effects of numbers on those at the receiving end, the material also offers insights into the moral nature of quantifying human life. The school grade hardly figures in quantification studies so far. While a few scholars acknowledge its importance (Hoskin and Macve 1994; Merry 2016), there are no case studies of the mark that consider it as a form of quantification. This is surprising insofar as grades predate most of the more well-researched forms of quantification by many centuries and are now a truly global technology. What is more, grading arguably constitutes the first systematic encounter of young people with social quantification, and the many years which children and adolescents spend in school are deeply formative. As Hannah Arendt once put it:

Normally the child is first introduced to the world in school. Now school is by no means the world and must not pretend to be; it is rather the institution that we interpose between the private domain of home and the world in order to make the transition from the family to the world possible at all. Attendance there is required not by the family but by the state, that is by the public world, and so, in relation to the child, school in a sense represents the world, although it is not yet actually the world (1954, p. 9).

Perhaps it is precisely because most of us became acquainted with grades from an early age, that numbers are often perceived as natural facts, disregarded for a long time even by social scientists as neutral entities. Researching grades

and engaging with the experiences of young people growing up quantified is a unique opportunity to observe culture as it is learned. Through an ethnography of the school grade, this book seeks to contribute to making sense of our present quantified life worlds and I hope that the insights may be of use in shaping those to come.

Structure of the book

There once was a world without grades, difficult though it may be to imagine. [Chapter 1](#) takes us back in time to explore where and when marking was invented and how it evolved. An equally intriguing question is why grades have survived until today and have become such a global success, despite centuries of both academic and public critique. While grades do not provide particularly nuanced feedback and instil only a questionable kind of motivation, they excel in one regard – that is the ranking of students, which became increasingly important with the rise of meritocracy.

Grading in contemporary Germany seems to follow the motto ‘more is more’. From the age of nine, students receive a staggering amount of numerical verdicts per year which later play a decisive role when seeking employment or university admission. This emphasis on performance – rather than family background – is often touted as a move towards equality. However, despite the fact that pupils are constantly tested and evaluated, educational injustice and social inequality remain high in Germany. [Chapter 2](#) takes a closer look at these issues afflicting the German education system, and also gives an impression of daily school life from the eyes of students.

The comprehensive school is a place where egalitarian ideals collide with the reality of a stratified school system. The teachers I met often lamented that their institution was treated as a last resort for those left behind, and students similarly expressed a sense of inferiority related to their school type. [Chapter 3](#) zooms in on the fieldsite to situate the present study in its socio-political context, and also details how the ethnographic work was conducted.

The [Chapters 4 to 9](#) take us into the classroom and out onto the school yard, accompanying the students to understand what grades do to those who receive them. Grading creates a rough distinction between ‘good’, ‘bad’, and ‘mediocre’ students. More importantly, it makes these groups visible in different ways towards an ever-present audience of parents, teachers, and peers. [Chapter 4](#) illustrates how grades put both the successful and failing student into the spotlight, while those with mediocre results are no less datafied, but remain largely hidden in plain sight because their numbers do not attract attention. Grades as a form of quantification expose students to scrutiny and this often unwanted visibility can turn into a ‘tyranny of light’ ([Tsoukas 1997](#)) that robs pupils of the chance to conceal certain information and to fashion their own image.

Grades also have a strong impact on how students view themselves. However, especially those children who struggle have much to lose in this regard if they straightforwardly identify with their low marks. Following the 11-year-old Milad through his daily school life in [Chapter 5](#) offers the opportunity to see how these students mobilise an imaginative range of strategies to preserve a somewhat positive self-image in defence against the numbers that tell them they are 'stupid'.

Most of the students I met fiercely advocated for grading, even though they often received low marks themselves. The pupils' arguments appealed to the importance of constant betterment and of working one's way up in a hierarchical society – in other words evoking the core components of a particular political ideal, namely meritocracy. [Chapter 6](#) is dedicated to exploring how grades encourage meritocratic thinking and thus leave little room for other, more egalitarian approaches to justice.

Michel Foucault famously theorised the school as a disciplinary institution, and [Chapter 7](#) presents an analysis of the role of grades therein. The teachers in my fieldsite frequently resorted to 'governing by numbers' and used marks to discourage or reward certain kinds of behaviour. Even though grading is clearly a non-corporeal disciplinary tool, it can nevertheless have a significant visceral effect on students. Observing students as they receive marks and respond to a thought experiment in the interviews provides insights into how it feels – quite literally – to be quantified.

Numbers are often associated with objectivity, neutrality, and ultimately truth. Also in the school, grades are handled – at least in practical terms – as facts which settle a student's fate in many important decisions. The high epistemic status of quantification comes at a cost, however, because it can discredit other potential sources of knowledge. Particularly students' testimony often receives less than its fair share of credibility. By drawing on the concept of 'testimonial injustice' ([Fricker 2007](#)), [Chapter 8](#) looks at how students feel their voices 'count', especially in cases where they clash with their numbers.

In light of the pervasive and increasingly invasive measurement that all of us are subjected to, it becomes important to think about the ethics of quantification. [Chapter 9](#) therefore departs from the immediate effects of the school grade to ask what this case study can tell us about handling numbers virtuously and whether it can sometimes be right not to quantify at all. I close by proposing three rights as a defence against the ever-growing quantification of human life.

1. The global triumph of grades

Grades are to education what Coca-Cola is to the beverage market – only with a much longer history. From their early beginnings in 600 AD China, grades have swept across the entire world and have become *the* globally recognised metric in education. The basic recipe of grading has remained unchanged throughout the centuries and, much like the brown fizzy drink, grades ‘work’ in a truly incredibly range of cultural contexts, from Mexico to Iceland. Finally, marks and Coke have not only survived, but thrived in the face of continuous criticism and warnings about their detrimental side effects. In this chapter, I offer a brief history of the grade before I turn to a discussion of its role in education. By examining the most common arguments and empirical evidence around grading, I ask what can explain its tremendous worldwide success. I finally make the case that grades are at their core a form of quantification and that this insight is vital for understanding their effects.

Grading or marking typically involves three elements: performance, evaluation, and quantification. A teacher, professor, or algorithmic system judges a student’s performance along a predefined spectrum – the marking scale – and expresses their verdict as a single figure. Number or letter grades, for instance from 1 to 6 or from A to F are by far the most common forms, but also smileys, pluses and minuses, words (‘very good’), percentages, points or any other symbols can function in the same way.

Even though the triad of *evaluating performance* in a *quantitative* way also occurs, for instance, in the work place or even in medical encounters, most of us associate grading with school – the context in which we came into the first and most intense contact with being judged in this manner. Apart from school, educational marking takes place in standardised aptitude testing (think SATs or IQs), entrance examinations as well as university or vocational training courses. All of these grading systems share their quantificational nature, meaning that they compress a judgement into a single figure or symbol and therefore allow for comparisons in terms of degree. A collection of grades can be aggregated and averaged to yield an overall GPA and both this, as well as the individual marks, are routinely recorded and communicated via official documents, such as report cards, diplomas, or certificates, which are issued in the name of an institution. With this first conceptualisation in mind, it is time to trace the historical origins of grades.

A brief history of grades

Michel Foucault once decried that scholars spent their time chronicling experiments on wolf-children or on people under hypnosis, but that nobody seemed to be bothered to write ‘the more general, more fluid, but also more determinant history of the “examination” and ‘its systems of marking and classification’ (Foucault 1991, p. 185). When it comes to grading, Foucault’s observation is as accurate as it was in 1975. It is indeed vexing that no one has yet set out to pen the global, comprehensive history of grades – this pivotal metric which has been shaping the lives of billions of students for centuries. Meanwhile, the genealogy of Coca-Cola has been recorded in detail. The existing historical research on grades is a mosaic of often high-quality work on specific regional developments in a variety of educational settings and usually with a narrow focus on a particular time frame. The following brief sketch is reflective of the state of scholarship insofar as it can make no claims to completeness and is skewed towards developments in the Global North, particularly Germany, the UK, and the US.

As Foucault rightly observed, grading functions as part of a larger practice, namely the examination. The world’s oldest examinations are thus likely contenders for the birthplace of the mark, for we can presume that ‘a scale of values was present whenever there were persons to be measured’ (Smallwood 1935). The infamous Civil Service examination in imperial China from the 1st century AD is often cited as the first known case, where the candidates had to endure several days of rigorous and strenuous written testing in order to win a highly sought after position in public administration (Elman 2013). In Europe, some of the earliest examinations mentioned are those in medieval universities from the 12th century onwards (Hoskin and Macve 1994, p. 73) and we learn from historical accounts that, unlike in China, oral rather than written assessment was the norm here (Stray 2001). In Oxford and Cambridge, for instance, all *viva voces* were public and conducted in Latin (Stray 2001). References to formal examinations in schools are to be found in documents from the 16th century. The systematic testing of students seems to have been an integral feature of schools run by the Brethren of the Common Life and notably also of those by the Society of Jesus (Codina Mir 1968, pp. 172–174, 184; Kellaghan and Greany 2019, pp. 49–50). In fact, it is here that we find the first clear evidence of a grading scale.

In Jesuit schools, students were seated according to their performance in the class cohort. Each seat corresponded to a particular rank and students changed places accordingly (Ziegenspeck 1973, p. 40). This practice of ‘Lokation’ was justified on the assumption that it would encourage successful students to defend their prime positions whereas lower-performing students would strive to move up. When several seats in the ranking were combined into zones, represented by a grade and fixed in official student reports, the predecessor of the modern-day marking system was born. The ‘Ratio Studiorum’ from 1599 which prescribes the organisation of Jesuit schools contains the grades

optimus, bonus, mediocris, dubius, retinendus, and rejiciendus which were also represented by the numbers 1 to 6, respectively (Dohse 1967, p. 49; see Farrell 1970, p. 70 for an English translation of the original). To this day, the six-point scale forms the basis of grading in Germany, which will be described in more detail in Chapter 2. In 1646, one can find the first evidence of examinations, but not marks, in American universities (Smallwood 1935, p. 8), arguably the product of emulating the practices of Oxford and Cambridge in Yale and Harvard, respectively (Smallwood 1935, p. 5). The earliest record of written and graded examinations is found from 1702 on the Cambridge mathematical degree in Trinity College where students were graded into four groups: *wranglers* and *senior optimes*, which constituted the first class, *junior optimes* as second class and *hoi polloi* ('the mob') (Stray 2001, pp. 36–37). The most widely cited 'first' mention of grades, however, is that from the year 1785. In the diary of the president of Yale University, Ezra Stiles, one finds the remark that seniors were grouped into four categories: *optimi, second optimi, inferiores, and periores* (Smallwood 1935, p. 42).

The Jesuits' fully formed grading system has been somewhat neglected in much of the social sciences and many sources exclusively cite early universities as the cradle of grades. Many academics who draw on the emergence of examinations and grades for their arguments tend to thus locate it in 18th-century Oxbridge or the French *Grandes Écoles* (Hoskin and Macve 1994, p. 73). In a footnote to their book chapter on the genesis of accounting's modern power, Hoskin and Macve explain that they do not perceive of the earlier grading systems in Jesuit schools as central to their argument because they allegedly only consisted in ordinary ranking and 'did not in themselves confer an independent numerical value on each individual performance or construct performance norms' (1994, p. 92). It seems that these authors, and perhaps other scholars too, refer only to the practice of Lokation, that is, spatial rankings, in Jesuit schools but fail to acknowledge the existence of a fully developed grading scale in 16th-century education. A notable exception is Michel Foucault who, in his work on disciplinary power, discusses point systems in early Christian schools (Foucault 1990). Less controversial than the first use of grades is the fact that from the 18th century, grading gained traction and soon became a ubiquitous practice both within universities and, from there, in schools. Around this time, universities became more and more crowded because they offered the chance at obtaining a highly sought after position in the Civil Service. Schools in Europe began introducing final examinations upon which admission to higher education was to be based. The process began in Prussia, and the German *Abitur* (A-Level equivalent) was one of the first secondary school certificates to be introduced globally, in 1788 (Neuhaus and Jacobsen 2022). Around 1850, English schools approached Oxford and Cambridge to devise the first public examinations too (Roach 1971) and by the 19th century, grades were implemented in most US colleges (Hessinger 1999).

Today, grades are a worldwide phenomenon, to which the truly astonishing variety of marking scales attests – in fact, a Wikipedia article is dedicated solely to listing the different systems ('Grading systems by country' 2021). The six-point scale which is at the heart of marking in Germany is relatively rare in international comparison, as is its system whereby the lowest number represents the best grade. Inverted five-point scales, where a five represents the best grade, exist for instance in Russia, Slovenia, Portugal, Turkey, and Kosovo. A different common variant, used for instance in Moldova, the Netherlands, Romania, and Spain, are scales from one to ten, the latter usually being the best result. Other scales have the number 20 (France) or 60 (Luxembourg) as their upper ends. Decimal scores are employed for example for the German Abitur, in Iceland, in the US GPA system, in Afghanistan and Kuwait. Percentages are also common, for instance in China, Korea, Israel, Malaysia, Nigeria, Tanzania, India, and Saudi Arabia and are often translated into variations of a letter system, for example from A to F.

Purposes and critiques of grades

After this glimpse of the history of grades, let us now return to the contemporary world of education. While historical documents provide indications on the genesis of marks, they often remain silent on the motives for their introduction to schools and universities. Current discourse, by contrast, provides ample material for retracing the purposes of marks. In the following, I discuss the most commonly cited of these objectives by drawing on the German education scholar Jörg Ziegenspeck, who in his now classic and widely cited 'Grades and Reports in School' (1973) posits three main functions of grades. I then turn to pieces of literature in which authors assess the extent to which marks fulfil the purposes outlined.

Ziegenspeck differentiates between three functions of grades: (1) an orientation and report function; (2) a pedagogical function; and (3) a selection, ranking, and entitlement function. Firstly, grades are meant to be employed for providing information on a student's performance. For the students themselves, this can be a helpful *orientation* as to how they are doing academically in the eyes of their teacher (Ziegenspeck 1973, pp. 53–54). Grades also act as periodic feedback to parents about their child's behaviour and performance. As such, they fulfil a *report* function that can be perceived as a link between the home and the school. It enables parents to track the child's development over the school years and provides them with a reference for the potential 'concretisation of the use of disciplinary measures' (Ziegenspeck 1973, p. 54, own translation). The report function also extends to teachers and the school's administration as the students' results may be read as a representation of teaching success. In the current age of school audit and public accountability, the group of those drawing on grades as reports has enlarged further: especially

in the US and UK, grades now also function as a report to external audiences which assess the quality of schools (Koretz 2017). Secondly, grades are often said to enact a pedagogical function. This comprises the use of marks for motivating students, for disciplining them, and as a preparation for living in an achievement-oriented society (Ziegenspeck 1973, pp. 58–61). Lastly, the use of grades is frequently evoked in relation to selection, ranking, or entitlement. Ziegenspeck therefore notes that the school report is not primarily a tool of the school but rather imposed on it by a ‘bureaucratized, nationalistic society, [and] employed with the aim to select successors on the basis of the achievement principle’ (Ziegenspeck 1973, pp. 59–60, own translation).

Very little academic literature has argued explicitly in favour of grades.¹ As Oelkers remarks, critique takes the centre stage and hardly any ‘critical counter evidence’ has been produced, at least in the German-speaking context (2002, p. 8). One of the earliest critiques of grading can be found in the 1786 diary of the former president of Yale University, Ezra Stiles, who observed that examinations and marks had an adverse impact on student performance:

The dread of Examina and a Fear of hav[ing] A Degree depend on Merit has produced a Commotion and Convulsion in College And the follow[ing] Martyrdoms to the cause of poor Scholarship (Stiles 1786 quoted in Smallwood 1935).

The specifically German debate on grading has been on-going at least since the introduction of the Reifeprüfung, the predecessor of the Abitur in 1788 (Ziegenspeck 1973). About one hundred years later, the author of a medical article from 1899, for instance, warns of the consequences of examination stress and grade anxiety, and includes vivid descriptions of young boys revising Latin, algebra, and history to the point of exhaustion, spurred on by their anxious and ambitious parents (Schreiber 1899). Critiques of school education were also a prominent theme in German novels at the beginning of the 20th century, which portrayed the institution as responsible for overburdening students by emphasising examinations as the sole measurement of educational success (see, for example, Hesse 1906; Whittaker 2013).

Academic critiques have since then moved from anecdotal to empirical evidence. According to Oelkers, research on grading was most active from 1920 to 1970, peaking in Germany between 1950 and 1970 and slightly dwindling from then on, compared to scholarly work in the UK and the US (2002, p. 3). Nevertheless, it should be noted that academic writing on grading has continually been published since then, and studies are still being undertaken – both in Germany and in the English-speaking context. In recent decades, particularly the field of ‘assessment studies’ in education departments has taken up the issue of school marks again, discussing it alongside other variants of evaluation such as formative assessment, high-stakes testing, or standardised testing.

The orientation and report function

The most common arguments for and against grading in the academic literature can be grouped nicely according to Ziegenspeck's three functions. Firstly, a large body of work on grades questions their effectiveness in enacting the orientation and report function. Empirical material suggests that especially the youngest pupils tend to view good grades as a 'proof of love or sympathy' and low grades as a withdrawal of affection from their teachers, rather than as a reflection of their performance (Ziegenspeck 1973, p. 53). While it seems that grades may be used in search for an objective identity between the ages of 9 and 13, their reliability is, according to Ziegenspeck, questioned more and more with the onset of puberty (Ziegenspeck 1973, p. 54). This then throws into doubt the orientation function of marks. With regards to reports to parents, grades offer particularly little information in comparison to other (for example, written) forms of feedback. If parents are not issued additional information – such as the comparison of the child to others in the class – grades are little more than 'mere symbols' (Ziegenspeck 1973, p. 53), Ziegenspeck states. After all, the mark 3² can 'simultaneously designate a highly gifted do-nothing, a studious average student, a good thinker who works hastily, an un-independent routineer and much more' (Flitner 1970, own translation).

One of the most prevalent topics in research on grading is the large degree of subjectivity involved. Many studies have illustrated that marks do not only reflect the student's performance, but that a variety of factors guide the teacher's perception of it (Ingenkamp 1976). It has been shown that stereotypes and gender biases influence the grading process (Maaz, Baeriswyl, and Trautwein 2011; Nickel and Wieczerkowski 1974; Richter 1996) and that teachers show a tendency for persistence in their perception of individual students, therefore rarely veering from their fixed image (Ziegenspeck 1999). Teachers' expectations have an impact on student behaviour and performance (Ingenkamp 1976) as students tend to adapt to the image that teachers have of them. This phenomenon is well-known in educational circles under the term the 'Pygmalion effect' (Rosenthal and Jacobson 1968). As I discuss in-depth in Chapter 2, socio-economic background remains one of the most significant determinants of students' school grades (Maaz et al. 2011; Reay 2017) and other factors include students' handwriting (Hauschild 2014), their first names (Bonefeld and Dickhäuser 2018), their physical attractiveness (Bull and Stevens 1979) and the order in which exam papers are reviewed (Farrell and Gilbert 1960; Spear 1996). Teachers' feelings of sympathy and antipathy towards students are correlated with higher and lower grades, respectively (Ziegenspeck 1999, p. 206) and poor performance is often acknowledged less for a generally good student, whereas good performance counts less for generally low-performing students (Ziegenspeck 1999). Further support for the subjectivity of grading comes from now classic studies which show that approaches to and outcomes of marking vary substantially between teachers (Oelkers 2002, p. 5). As early as 1912, 142 teachers were asked to mark the same English paper and the

resulting grades varied from 50% to 98% (Starch and Elliot 1912). The discrepancy was even greater in the assessment of a geometry paper (Starch and Elliot 1913). Personal stylistic preferences have been shown to shape teachers' assessment of written essays (Bobertag 1933; Nickel and Wieczerkowski 1974; Ulbricht 1949), whereas differential weighing of mistakes versus correct solutions influences the marking of mathematics exams (Haecker 1971). There is ample empirical evidence that even the same teacher grades the same paper differently at different times. Eells' well-known study (1930) saw 61 teachers marking the same history and geography papers twice, with a time span of 11 weeks in between. Surprisingly, the variation between the two marks was almost as high as the variation between marks by different teachers. Taken together, the existing research calls into doubt the extent to which grades can offer dependable orientation and reports.

The pedagogical function

The second function in Ziegenspeck's systematisation is the pedagogical one, where grades are envisaged as serving to motivate and discipline students, as well as to prepare them for life in a meritocratic society. It has been shown repeatedly in empirical studies that only those students with continually high grades are motivated by them. While a one-off criticism can be an encouragement to improve one's work, a succession of bad grades has a demoralising and demotivating effect (Arnold and Jürgens 2001, p. 18; Schinske and Tanner 2014). In their work on the so-called GPA perspective, Becker, Geer, and Hughes illustrate that many students prioritise 'making the grade' over learning for themselves and for intellectual growth (1968, pp. 58–59). More recent scholarship lends support to the claim that the GPA perspective entails an emphasis on scoring high, often at the cost of developing an interest in learning (Pulfrey, Buchs, and Butera 2011; Rabow, Choi, and Purdy 1998). Similarly, Wolff observes that grading encourages gaming strategies among students (1969) and this is sometimes framed in terms of extrinsic motivation overruling intrinsic motivation (Lepper, Corpus, and Iyengar 2005). Empirical studies also suggest that where written feedback is accompanied by a grade, students often do not read comments and do not act on them in future work (Brookhart 2008; Marble, Winne, and Martin 1978; Pulfrey et al. 2011). Where marks are used to hold schools accountable for their performance, it has been shown that teachers too – rather than being motivated to do well – resort to a variety of strategies to ensure that their students achieve favourable results, including 'teaching to the test' (Barksdale-Ladd and Thomas 2000; Berliner 2011), excluding students for statistical reasons (Amrein and Berliner 2002), and cheating (Jacob and Levitt 2003; Koretz 2017; Piphoo 2000). Apart from motivating students, disciplining them is a further action subsumed under Ziegenspeck's 'pedagogical function' of grades. Historical documents show that the reason for introducing grades in US colleges in the early 19th century

was to find a way of managing disorderly elite students without having to resort to explicit punishment (Hessinger 1999). Putting students in competition with each other for marks of distinction was thought of as ‘the most powerful instrument of college discipline’ (Hessinger 1999). Similarly, the banning of corporal punishment in South Korean schools in 2011 saw the implementation of a demerit system in which grade-points were deducted for unseemly behaviour, such as sleeping in class (Necek 2018). The practice of using grades to discipline students is harshly criticised by many education scholars. Arnold and Jürgens (2001) emphasise the ethical problems of such an approach – such as teachers’ abuse of power and the insinuation of student non-compliance as the sole explanation of low performance. With respect to teachers, it has been described that some of them experience ‘grading schizophrenia’. Having to simultaneously adopt the role of the mentor and the judge can result in being torn between wanting to support students in their development and having to ‘punish’ them for achieving less than perfect results (Bratcher and Ryan 2004, p. 3). The final constituent of the pedagogical function of grades is one often cited in German public discourse, namely that marks prepare students for an achievement-oriented world after school. With regards to this ‘toughening’ effect of grading, it has to be noted that the ubiquity and high stakes of quantitative assessment in school are unparalleled in most professions outside of education and, therefore, the exposure to grading in school might be of limited preparatory value for later life. Based on the analyses named above, many scholars conclude that grading ‘makes no sense from a pedagogical point of view’ (von Saldern 1999, p. 175) and some hold that it performs an ‘un-pedagogical function’ rather than a pedagogical one (Arnold and Jürgens 2001).

The selection, ranking, and entitlement function

As can be seen from the discussion above, scholars have largely argued against grading and this critical stance is also at the forefront of many teachers’ awareness (Ingenkamp 1976). In remarkable contrast to this overall conviction of the many drawbacks of marks is the fact that they remain at the very heart of education around the world. Academic work suggests that the primary reason for the widespread use of grades is that they powerfully enact the third of Ziegenspeck’s functions – the selection, ranking, and entitlement function. Oelkers maintains that assessment is a necessary component of a highly selective school system which emphasises performance. He finds that the grading debate comes down to the question of whether ‘a selective performance school is wanted or not’ (Oelkers 2002, p. 15, own translation). If it is, then grading, in his eyes, is simply the assessment method with the biggest practical benefit to teachers and consumers. Numbers enable a ‘quick and handy [...] processing’ of large numbers of students that would not otherwise be manageable – especially when selecting for a small elite (Zielinski 1961,

p. 126, own translation). Historically, grading was seen as a way to ensure that academic merit – as opposed to familial prestige or age – was the deciding factor in access to educational opportunities (Hessinger 1999). While this certainly opened up educational opportunities for individuals from less well-off families, it has to be acknowledged that, historically, it was particularly the educated middle-class which profited from the introduction of the merit principle for upward social mobility (Ianiro-Dahm and Chwallek 2016; Ingenkamp 1990, p. 53; Simmank 2018). The societal effects of grading as a tool for selection have been investigated in some detail in the existing scholarship. Several authors contend that the grading regime applies market values to the school context. In his historical account of the introduction of grading to US colleges, Hessinger (1999) shows that marks were employed to establish meritocratic ranks between students as a mode of governance. Such ‘parental means of inducement tapped deeply into the emerging market values of competition, transforming American society and economy’ (1999, p. 250). The increasingly unequal distribution of wealth in the US also benefited from this new notion of meritocracy as a useful explanatory ideology to account for ‘such a seemingly undemocratic phenomenon’ (Hessinger 1999, p. 262). Similar critiques have been brought forward against grading in Germany (cf. for example Arnold and Jürgens 2001; Ullrich and Wöbcke 1981). Continuing the market analogy, grades have been described as a currency – used both for gaining access to economic opportunity and for negotiating social status (Becker et al. 1968; Rabow et al. 1998; Wolff 1969). As the primary and often sole representation of academic success, grades are heavily institutionalised, which – like money – makes them difficult to ignore. Not investing in good grades has tangible repercussions (Becker et al. 1968, p. 56) and some scholars have put forward the critical argument that this role of grades as a currency leads to their fetishisation, and students fixating on their marks have been likened to misers obsessing over money (Wolff 1969, p. 459). Because much hinges on grades, scholars often talk of ‘high-stakes’ testing and assessment. The detrimental consequences of the anxiety this can induce in students have received substantial criticism from a medical point of view. At least since the late 19th century, scholars have warned of the significant negative consequences of exam-related stress (Jiménez and Vera 2018; Kamezaki et al. 2012; Schreiber 1899; Türkoğlu et al. 2018) and sociological work has illustrated that students routinely sacrifice aspects of their mental and bodily health for a high GPA (Rabow et al. 1998).

A further frequent socio-political critique is that grading induces competition amongst students – also a key feature of the market analogy. Students describe that competitive relations are initially introduced and encouraged by teachers and parents (Carless and Lam 2014; Rabow et al. 1998, pp. 464–65) and the already mentioned historical sources support the view that grading was in some contexts employed to lessen loyalty amongst students (Hessinger 1999). When grading is based explicitly on an assumed normal distribution (‘grading on a curve’, ‘norm-referenced grading’), students effectively compete

for class positions. However, even where the alternative criterion-referenced grading is employed, a normal distribution is often implicitly assumed by teachers – resulting in a similarly competitive environment for students (Schinske and Tanner 2014).

Concerns about competition often evoke criticisms of social injustice and inequality. As Reay (2018) puts it, the current hypercompetitive ‘remorseless ranking culture’ in education establishes a system of winners and losers. It is now well-documented that the ‘losers’ are disproportionately children from disadvantaged socio-economic backgrounds and ethnic minorities (Maaz et al. 2011; Paschall, Gershoff, and Kuhfeld 2018; Reay 2017). This is closely tied in with studies which have shown that a large variety of both cognitive and non-cognitive determinants, such as anxiety, self-esteem, degree of extraversion, physical activity, personality traits, or even smartphone use, impact student performance (Álvarez-Bueno et al. 2017; Conard 2006; Heller 1974; Lepp, Barkley, and Karpinski 2014). Nevertheless, grades are often read as an indicator of student ability and effort, thus obscuring situational and biographical components which can cause certain performance. As opposed to many techniques of the audit culture – in which institutions or even nations are being assessed – the marking system revolves around the notion of individualization (see for example Reay 2018). Students who receive low grades show a tendency to withdraw from school work (Arnold and Jürgens 2001; Schinske and Tanner 2014) and are highly likely to lose trust in their abilities, thus entering a vicious circle of academic failure (Oelkers 2002, p. 5). Several authors have illustrated the closely connected significance of grades for students’ self-esteem, showing that grades constitute a means of receiving validation and acknowledgement. Especially in relation to parents, it was found that achieving good grades was ‘the method through which more than one student found love and attention in the home’ (Rabow et al. 1998, p. 462; see also Carless and Lam 2014).

In sum, research on grading in education has been preponderantly critical and suggests that the practice largely fails to fulfil a pedagogical function and is of limited use for reliably enacting an orientation and report function. The contrasting prominence of marks in the education system is largely explained by the remarkable success of grades in selecting and ranking students, although scholars point to some problematic socio-political ramifications of this function of marking.

Beyond the key findings discussed, several methodological trends can be observed in research on grades. Firstly, it must be noted that writings on the topic tend to be largely confined to education sciences, with scholars from other fields rather rarely taking an interest in the practice. Secondly, those authors cited above who ponder the social, and in particular the individual consequences of grading, constitute a minority. Both past and current educational research on grading, now notably in the field of assessment studies, tends to focus instead on how marks impact learning. This ‘learnification’ (Biesta 2009) is lamentable, for education is certainly about much more than

that, and the many years that children and adolescents spend in school are deeply formative, not only for themselves but by extension also for society. Thirdly, ethnographic engagement with grading is not the norm, perhaps as a result of the aforementioned focus on the practical, rather than social effects of grades. I was able to find a single ethnographic article on grading in Germany (Kalthoff 2013), but this piece mirrored a fourth trend, namely that it engaged with the teachers' rather than the pupils' perspective. Much academic work is concerned with *grading*, rather than *being graded* and, as a result, the voice of pupils is conspicuously missing from the discourse (see also Reay 2018), as are insights into the lived experience of receiving marks. Finally, grades are usually discussed in their capacity as an assessment tool – references to a broader understanding of marks as a form of quantification are rather absent from the existing scholarship. In other words, those working on grading are rarely interested in quantification.

The reverse is also true, as grading has so far received little attention in quantification studies. A notable exception is the work by Keith Hoskin and Richard Macve who argue that grading constituted the first exercise of social quantification in human history. In a book chapter on the genesis of accounting practices, Hoskin and Macve state that, when it comes to the invention of new forms of writing and examining, 'each time fundamental change begins in the marginal field of education' and not, as commonly assumed, in the economy (1994, p. 68). According to their historical analysis, universities in the 12th century were the first to introduce examinations, though oral and ungraded, as well as a new alphanumeric way of organising texts in columns and with the help of numbers (1994, p. 69). These new practices, the authors reason, paved the way for the invention of double-entry bookkeeping in the 14th century, which is widely regarded as vital for the spread of quantification. In a second phase, from the late 18th century onwards, developments in education once again changed the course of history. Hoskin and Macve write:

[...] humans increasingly discovered that there is no quality which cannot, in principle be quantified. The mark, we suggest, was the technology that initiated the drive towards this ubiquitous calculability. First deployed in institutions like Cambridge and the French *Grandes Écoles* in the late eighteenth century³ [...] it did not just put a number on performance, it put a quantifiable value on the person, providing for the first time in history an objective measure of human success and failure (1994, p. 70).

While Hoskin's and Macve's postulate that changes in ways of writing *always* originate in the education sector has been critically received (Vormbusch 2012, p. 111), their emphasis on grading as socially transformative echoes the analysis of a different influential scholar: Michel Foucault. Foucault's work exerts a perennial fascination on anthropologists, perhaps matched only by the appeal of Bourdieu's writing (Luvaas 2016). The sentiment extends into

education sciences where countless books and articles have been published on the theme of Foucault and school. The relevance of the French polymath to education may be partly explained by the fact that, similar to Hoskin and Macve, Foucault viewed educational settings as central to deep social changes. Particularly in *Discipline and Punish* (1990), this becomes apparent. At the heart of his argument is the idea that, since the Middle Ages, corporeal punishment was increasingly replaced by disciplinary power which strives to create docile, obedient bodies without acting on them physically. Foucault notes that discipline operates with simple tools – hierarchical observation and normalising judgement – which are combined in the examination, ‘a procedure that is specific to it’ (Foucault 1990). For Foucault, one of the key operations of disciplinary power is that it ‘measures in quantitative terms and hierarchises in terms of value the abilities, the level, the “nature” of individuals’ (Foucault 1990, p. 183) and it seems then, that grading was one of, if not the first historical tool to enact this new kind of control.

There is a strong argument to be made for bringing together the study of grades and quantification, for both stand to benefit greatly from one another. In the young and promising field of quantification studies, grades represent a fascinating case study for researching the social dynamics of numbers, and especially the question of what it means to be quantified. On the other hand, analysing grades as a form of quantification helps to gain a more nuanced understanding of their repercussions and can contribute greatly to better-informed debates around assessment in education.

Having reviewed the history, purposes and critiques of grading, it is time to consider the role that they play in the German school system – the context of the present study.

Notes

- ¹ This is, of course, in contrast to an extensive body of policy writings and practical guidelines on the basis of which grading is applied and refined.
- ² This is roughly equivalent to a C in the familiar letter grading scale.
- ³ Please note my earlier point that grades were in fact already in existence in 16th-century Jesuit schools.

2. Schooling and grading – the German way

The day when a child in Germany starts school, aged between five and seven, is marked with a celebration. Family members put on their best outfits and walk the soon-to-be *Erstklässler* (first grader) to school, who proudly carries what is known as a *Schultüte*. This colourful cardboard object is almost the size of the child itself and resembles an oversized ice cream cone which is filled to the brim with sweets and small toys – tokens of reward for having reached this important milestone. Much as the first day of school is fervently anticipated by most children – perhaps partly because of the *Schultüte* – it also inspires a measure of fear in many. At least all German-born children will have heard the same sentence in the run-up to the big day: ‘*Jetzt beginnt der Ernst des Lebens.*’ Some relative or family friend can always be counted upon to share this staple of conventional German wisdom, stating that the time to be carefree is over and that life must now be lived in earnest. The impression created is that the beginning of education is at once the end of childhood.

In order to appreciate the German school experience, it is helpful to have an understanding of its characteristic features and embedded values. This chapter is dedicated to exploring the educational setting within which the research took place and which my interlocutors navigated day to day. Before discussing the matters of educational injustice, daily school life and grading policy, a few notes on the basic structure of the German school system are in order.

Unlike in many other countries around the world, home-schooling is illegal in Germany. In fact, ask any pupil in Germany about what would happen if they refused to go to school and you will usually get the same answer: ‘The police will come and get you.’ Therefore, from the age of seven at the latest, all children must attend school, usually for a total of 12 years (depending on the regulations in the given federal state¹). After the first four to six years in a local primary school, the children are split up to attend different types of secondary schools and the maximum age that one can still be in school by is roughly 21.

Up to the 1970s, the West-German education system had a tripartite structure. The three main secondary school types were the *Gymnasium*, primarily for highly achieving or well-off students, the *Hauptschule* for those less so, and the *Realschule* which is located between the two other forms (Edelstein 2013). *Hauptschulen* have been slowly phased out and replaced by so-called *Sekundarschulen* since 2012 (Bernhard 2018; Kosmahl 2018).

The comprehensive school (*Gesamtschule*) entered the scene about 50 years ago and its professed purpose – which will be discussed in more detail in [Chapter 3](#) – was to provide secondary education for children of all abilities, thus striving to offer an alternative to an otherwise strongly stratified school system.

After the 2000 ‘PISA shock’ which saw the performance of German students ranked very low in comparison to that of other pupils worldwide, the education system proliferated further still. Different federal states now exhibit a range of school forms – making Germany’s variety of institutions for secondary education one of a kind amongst the OECD countries ([Frietsch and Aufmkolk 2018](#)). A further division is made up of so-called *Förderschulen*, special-needs schools for children with learning difficulties or mental or physical disabilities. Finally, there is the private sector which comprises slightly more than 5800 schools in Germany ([Grossarth-Maticek, Kann, and Koufen 2020](#), p. 4). They include reform pedagogy institutions such as Montessori- or Rudolf-Steiner Schools, religious schools, as well as international and boarding schools with fees of up to €3000 per month ([Kraul 2014](#)). While the number of private schools has almost doubled in the past 20 years ([Grossarth-Maticek et al. 2020](#), p. 4), it is important to note that about 91% of students in Germany still attend public institutions ([Grossarth-Maticek et al. 2020](#), p. 5). It is partly this fact which gives rise to one of the most tenacious myths about education in Germany.

Educational (in)justice

In informal conversation, an oft-mentioned feature of the German school system is its alleged ‘permeability’, meaning that educational success and thus social climbing is possible regardless of a child’s background. This view is supported particularly by the above-mentioned fact that the vast majority of students are educated in public schools and that even the most prestigious Gymnasias do not charge school fees². What is more, attendance of university is practically free – apart from a small semester fee of roughly €350 – and there exists a modest interest-free maintenance grant for university students from low-income backgrounds ([BMBF 2020b](#)). It seems thus at first glance that the most important currency for upward social mobility is individual achievement or performance, as measured in grades. However, research on educational injustice has shown in recent decades that school success in Germany is significantly more difficult to attain for children from a low socio-economic class than for those from the upper strata of society.

When a person’s socio-economic background determines their success in the education system, this is an instantiation of educational injustice (*Bildungsgerechtigkeit*). The notion is frequently evoked in discussions about equality of opportunity more broadly, as the school is generally accepted as a key institution for the distribution of social status.

Drawing on the French sociologist [Boudon \(1974\)](#), scholars today distinguish between primary and secondary background effects which can have an impact on a child's educational and ultimately societal trajectory. Primary effects are those in which socio-economic class directly shapes the child's competences and as a result their academic performance. Support from parents, the value of education within the family, and the accessibility of study materials can, for example, have a significant impact on a student's behaviour and grades in school. Secondary background effects on the other hand are those which are independent of the individual's performance, such as teachers' stereotypes of a given social class and the different grading tendencies that result from these. Other important secondary effects are class-dependent decision-making of both parents and students when it comes to selecting a secondary school for the child (see for example [Jackson et al. 2007](#); [Maaz, Baeriswyl, and Trautwein 2011](#); [Möller 2020](#)).

Social injustice in general is on the rise in Germany. Poverty and stark differences in income have augmented more than in any other OECD country in recent years ([OECD 2008](#)) and within this group, Germany is one of the states with the highest correlation between an individual's background and their school success ([Quenzel and Hurrelmann 2010](#), pp. 20,28). Educational injustice often starts in primary school: a lag in language competences, lack of resources, or a personality that is shaped by experiences of poverty can be cemented in low grades early on ([Ramseger and Wagener 2008](#)). Especially parental support has been shown to be decisive for school success and children from the lower classes are significantly disadvantaged in this respect. Their parents have often only had basic schooling and thus lack the abilities and familiarity with the content that their children are learning. What is more, these parents are disproportionately affected by poverty and the resulting lack of material and social resources, or sometimes have to handle several low-income jobs and thus do not have the time to help their children (see for example [Borchard et al. 2008](#)). The so-called all-day schools (including most comprehensive schools), where children stay on the premises until 16:00 or 17:00 on most weekdays, were initially introduced to mitigate the impact of socio-economic background on academic performance. The reasoning was that if all students were to complete their homework in school under the supervision of teachers, their achievements would no longer be dependent on having parental support. However, as Heinz-Peter Meidinger, president of the German teachers' union, sums up in an interview: 'The notion of the all-day school as a panacea is flawed. If parents support their children then this has a three to four times higher effect than the all-day school' ([Meidinger 2018](#), own translation).

If educational injustice already exists in primary school, it is substantiated with the so-called 'school trajectory recommendation' (*Schullaufbahnempfehlung*). After a child has spent the first four years in a local primary school, the teachers recommend a type of secondary school that they should attend, based on their performance. This sorting of students 'into groups, classes, and schools

as they progress through the public education system' (Letendre, Hofer, and Shimizu 2003, p. 43) is called 'tracking' in the education literature. It is always based on some kind of judgement or evaluation of students (Letendre, Hofer, and Shimizu 2003, p. 44) and in North-Rhine Westphalia, the decisive factor ought to be the child's grades (KMK 2015). Tracking is a feature of schools in all industrialised states (Letendre et al. 2003, p. 44) but Germany belongs to those countries in which the filing of students happens unusually early in their development. At the time when recommendations are issued, the children in North Rhine-Westphalia are nine to ten years old. Many international studies on tracking have revealed that this 'educational warehousing' (Oakes 1985) has a range of negative long-term effects on students in the lower tracks and their trajectories (van Houtte, Demanet, and Stevens 2012; Kerckhoff 1986). The German recommendation system too tends to reproduce and reinforce social inequalities. Children from the lower social classes frequently struggle to develop the same level of competences as their better-off peers (primary effect) – however, even if they *do* have the same abilities and grades, they are much less likely to be recommended to go to the Gymnasium (secondary effect). In fact, the chances of receiving a recommendation for and attending a Gymnasium is four times higher for a child from the educated middle-class than for the child of a skilled worker (Hußmann et al. 2017). Unlike in some other federal states, the teachers' recommendation is no longer binding in North-Rhine Westphalia, which means that parents ultimately decide where to enrol their child – assuming that enough places are available at the chosen school. While this freedom to decide might at first seem to counteract educational injustice, empirical reality does not support this assessment. As Hurrelmann and Quenzel sum up:

The likeliness of attending a Gymnasium depends in great part on the parental ambitions for education. Parents from the lower educational strata often envisage lower school trajectories, even if the child is recommended for a higher trajectory. Vice versa, parents from the upper classes insist on sending their child to the Gymnasium even if this does not correlate with the teachers' recommendation (2010, p. 14, own translation).

What is more, a teacher at my fieldsite school made it clear that if lower-class students attended the Gymnasium despite a different recommendation, they would be stigmatised from the start:

If the primary school teacher writes [in the recommendation]: 'Child is suitable for the Realschule or the comprehensive school,' and the parents choose the Gymnasium anyway, then the child will probably not be happy there. Because the teachers always already see: 'Wait a minute, look, you don't even belong here.' They have all of that in their files.

Educational inequality continues into secondary education and tends to have a long-term effect on an individual's social standing and vocational development. Twice as many students with a migration background drop out of school without any diploma than their German peers and three times as many of them do not conclude any vocational training (Beck, Jäpel, and Becker 2010). What is more, the chances of the child of a skilled worker to eventually complete a university degree are 1:12 in comparison to a child from the educated classes (Demmer 2008). Even if individuals from the lower social classes complete Higher Education, a long-term study covering over 30 years has shown that they are far behind their better-off peers in terms of careers after 20 years (Meidinger 2018).

Despite ample empirical evidence that the members of certain social groups are systematically disadvantaged in their chances for educational success, striving for the latter has become a ubiquitous requirement. According to sociological prognoses, Germany is developing towards a society in which one-third of the population spends one-third of their lives in education (Reckwitz 2019) and as a result, the job market is looking increasingly grim for those who cannot keep up. Over half of the teenagers in Germany aspire to complete the Abitur, the German A-Level equivalent, and for many vocational training courses, students from the Hauptschule will have difficulties to gain a place. As Hurrelman puts it, 'This process intensifies the "inflation" of educational titles. For the individual, it becomes ever more vital to enter the competitive battle with the highest possible formal educational titles' (Quenzel and Hurrelmann 2010, p. 13, own translation). The individuals fighting this battle have much to lose, as studies which investigate the relation between salary, education, and health suggest. Members of the lower social strata are much more likely to live in deprived areas and flats that pose a risk to their health. High-risk jobs and behaviour are more common among this group, as is restricted access to healthy foods. As a result, those left behind in the race for jobs and social prestige show a higher prevalence of illness and disease as well as a higher risk of an untimely death (Lampert and Ziese 2005, p. 28 ff.).

Many of the children whom I encountered during my fieldwork were directly affected by educational injustice. They were often aware of a social expectation to 'fight for their future' through good performance in school and yet they navigated a system which provided them with ample opportunity to experience just how unlikely they were to succeed in this. Despite the clearly systemic nature of the disadvantaging, one of the findings of my time in the field was that hardly any of the students were aware of these dynamics and overwhelmingly blamed themselves for their failures.

The daily life of a German pupil

School time is often remembered and portrayed in fictional works as a care-free, even romantic time, in which the pivotal experiences of childhood and

adolescence take centre stage. While being young is certainly about more than being a student, this sometimes glosses over the fact that the modern school is an institution which asks much of its attendees.

For most German students, school is a full-time job and notably 89% of comprehensive school students attend all-day schools (MSB NRW 2019b, p. 31) with 35 hours of class each week. Lessons started at 7:50 in my fieldsite school and several of the pupils were already there by 7:15 each day when it was still pitch-black outside during the long winter months. Some of the children showed me their alarm clocks on their smartphones which were set to as early as 5:05, depending on where they lived. Those students who lived further away took the bus to school and for some, this was a rough experience: shouting, teasing, and having to stand for the whole journey were some of the things that especially the younger children mentioned. For one 13-year-old girl I met, getting to school each day included changing busses and having to wait in a dark underground station without any peers. A typical weekly timetable for the 10 to 11 year olds I worked with would include two days from 7:50 to 13:10 and three days until 15:40. On every day, there were between five and seven different subjects scheduled and each teacher usually expected concentration and participation in their class. While the hours that students spend in school are similar to those of a working adult, the texture of the school day differs significantly from that of many professions. One of the teachers with over a decade of experience summed this up with a striking comparison, included in the following excerpt from my fieldnotes.

After having spent the morning with a particularly noisy and excited group of year five children, I was drinking a cup of tea in the staff room with Mrs Schröder. 'I honestly don't know how they cope with each other all day long,' I said, taking a sip of my tea. 'Yes, I know. Being a pupil can be quite tough, really,' responded Mrs Schröder³. She then gave a dry laugh and added: 'Actually, I recently read a text about conventional livestock farming with my year eight biology class. Then we replaced each use of the word "pig" with the word "pupil" and it was shockingly accurate. For most of the time, they're not in a family context but with same age peers whom they cannot choose. They are constantly surrounded with too many conspecies – many more than they can bear according to their natural communicative capacity. It's cramped, it's too loud and they're bored because they don't have the means to keep themselves occupied in a way that is species-appropriate. They can't move when they want to and they spend their days in artificial lighting.'

While the comparison may be somewhat drastic, during my fieldwork I observed many of the aspects that Mrs Schröder mentioned – in addition to constant evaluation. Throughout the school day, the pupils were always surrounded by a crowd of other students and the only few minutes in which

they were alone were those which they spent inside a toilet cubicle. In order to prevent students from staying there for too long, a different pupil ‘policed’ the area each day, knocking on doors to make people come out of the cubicle again. The average comprehensive school class has 27 students (MSB NRW 2019b, p. 43) which can result in exorbitantly high noise levels. Research has shown that a constant clamour of 65 to 85 decibels is common in classrooms – comparable to the noise that a lorry makes when it drives right past you (Hedtke 2020). The effects of noise have been investigated in particular in relation to teachers but of course are equally relevant to students: a chronic exposure to noise over 65 decibels can lead to noise-induced deafness and reduced concentration, as well as a significantly increased risk of depression and heart attack (Hedtke 2020).

The demands on modern-day students do not end when they leave the school premises in the afternoon. Even though the all-day school is not supposed to include homework for the students, I often observed that this was not the case in reality. Revision was the most noteworthy after-school activity, as tests and examinations were taking place on an almost weekly basis. Moreover, teachers regularly recommended what could be called ‘the notorious ten minutes’: when students struggled with the subject matter, many teachers – unaware of the fact that their colleagues did so too – would say things along the lines of ‘I know we are not supposed to set you any homework but if you could *just* take ten minutes a day to look at what we’ve been doing in class, that would get you a long way.’ Apart from school work, the younger students regularly engaged in extracurricular activities in the afternoon, such as sports, chess, learning instruments or their parents’ mother tongues – and not always, participation in these activities was entirely voluntary or perceived as free time by the children. The older students, on the other hand, frequently had part-time jobs alongside school, for example working in a pet supplies shop or a petrol station. Taking private tutoring classes (*Nachhilfe*) to get better grades is also common in Germany, even though it was not as prevalent among the financially disadvantaged families in my fieldsite school. Professor Michael Schulte-Marktwort, a well-known German child and adolescent psychologist and author of the book ‘*Burn Out Kids*’ (2016), argues that the timetables of many children are nowadays comparable to those of top managers and that a volume of 50 ‘working hours’ is not a rare sight (Löbl and Onneken 2020). Regardless of which afternoon activities students engaged in, many of them agreed that what they lacked was free, unplanned time, as would for example be necessary to process the day or to engage in free play. This lack of self-paced time has been identified as a major stress factor (Ziegler and Gropp 2015). The effects of their often challenging daily lives have been documented in a significant rise of stress levels in German children and adolescents. A 2008 study showed that 72% of children between the ages of 7 and 11 experience regular stress events (Ziegler and Gropp 2015) and the annual ‘prevention radar’ of a large German health insurance showed that 42% of school students are stressed often or very often. 56% of students experience exhaustion and

fatigue on a weekly basis and 46% suffer from sleeping problems (Hanewinkel et al. 2020). A study by the University of Bielefeld also showed that that every sixth child is ‘severely stressed’, a state which is accompanied by bodily symptoms such as headaches and tummy aches, in addition to fears of failure and feelings of inadequacy (Ziegler and Gropp 2015).

In my fieldwork, I noticed that especially for the older students, the 13 or more years that they had spent in school sometimes culminated in what teachers referred to as ‘school fatigue’ (*Schulmüdigkeit*). Sonia, a bubbly 18 year old with Middle Eastern parents who worked at a fast food restaurant in the afternoons and on Sundays, became uncharacteristically lethargic in our interview when I asked her what she would change about the German school system:

Generally the whole system. That you have to go to school in the morning and then home to do your homework. And then ... well ... go to school again, then homework again and then revising for the exam. I don’t know, it’s so ... somehow such a monotonous system. You’re trapped, you don’t have a ... no escape. It’s the same in working life, isn’t it? You get up, go to work, come home, go to work again.

Jamil, a highly intelligent and dynamic 11-year-old boy from Syria with good grades, also expressed dissatisfaction at the end of his first year in secondary school when he stood in front of his friend Mehmet, gesticulated wildly and shouted ‘Wallah, school is so unnecessary. You just waste thirteen years of your life here for *nothing*!’

Grades and grading in the German school system

Apart from its daily rhythm and texture, the single most important aspect that governs school life is grading. The grading procedures in German schooling vary significantly with the different educational stages, yielding a complex system of diverse scales and metrics which students navigate as they progress.

Grading, all over the world, falls into one of two categories: norm-referenced or criterion-referenced (Schinske and Tanner 2014, p. 162). The norm-referenced system is also sometimes called ‘grading on a curve’. It is based on the idea that student performance is distributed normally, similar to IQ scores. As a result, there is a set small percentage of students who can achieve the highest and lowest grades and most performances will fall in the middle. This approach to grading is common in US university natural science courses (Schinske and Tanner 2014), and to some degree in the UK GCSEs and A-Levels (Mannion 2017; UK Select Committee on Education and Skills 2003). As students are effectively not compared to a universal norm, but rather to others in their course or year, norm-referenced grading is perhaps better described as cohort-referenced (Mannion 2017). In German school and university education on the other hand, a so-called criterion-referenced

approach is employed, meaning that each grade represents a particular criterion which is fixed in the general education act. A six-point scale forms the basis of all grading in Germany, where the number 1 represents the upper, and the number 6 the lower end of the spectrum. Usually, at least a 4 is required for a pass. As an example, the criterion for a 4 is spelled out in the general education act as follows: “The grade “sufficient” [4] should be awarded if the performance exhibits deficiencies but still meets the requirements overall.’ (MSB NRW 2020a, § 48). In theory, this criterion-referenced approach entails that the number of students in a cohort receiving, for example, the top grade one is unlimited – given that they all perform equally well.

Each of the grades can also be expressed in a word or term, as is reproduced below (MSB NRW 2020a, § 48):

- 1 = very good (*sehr gut*)
- 2 = good (*gut*)
- 3 = satisfactory (*befriedigend*)
- 4 = sufficient (*ausreichend*)
- 5 = inadequate (*mangelhaft*)
- 6 = insufficient (*ungenügend*)

There is a myriad of different grading scales in use within the North Rhine-Westphalian school system, adapting the basic six-point schema. In order to understand the different versions, it is useful to distinguish between three stages of schooling. The primary level encompasses the four years in primary school. It is followed by the secondary level I which comprises the years five to ten. Lastly, the secondary level II consists of three additional years which are only completed by those working towards the Abitur. For the first two years of primary school, students receive end-of-year reports which contain their teachers’ textual commentaries on their performance in each of seven subjects (German, English, mathematics, music and arts, religion, general social and sciences studies, physical education). Often, these reports also contain remarks on character traits or attitudes such as studiousness or the (in)ability to concentrate. All students automatically progress from year one. After that, students may be retained – that is they have to repeat a particular year – if they fail to achieve sufficiently high results. It is in year three that children receive number grades for the first time. By then, the nine-year-old students sit written examinations throughout the school year and official report cards with grades for each subject are issued bi-annually, that is sometime around mid-February and at the end of the school year in the summer (IM NRW 2018, § 5–6). The grades in primary school are those from 1 to 6, even though the report cards either contain only the corresponding words (*sehr gut*, *gut*, and so on) or the number grades are at least accompanied by those words.

From years five to nine (secondary stage I), that is between the ages of 10 to 14, all students attend a secondary school. The grading scale in use throughout these years is based on the familiar six numbers, but each of them, expect for

the 6, can now be modified with a plus or minus. In practice, this yields a 16-point-scale from 1+ to 1, to 1- and so on, down to 5+, 5, 5- and 6. A distinguishing feature of German schooling is that not only the students' written performance, but also their oral participation in class finds its way into the final grades. Report cards are issued twice a year, and each of the grades on them is routinely constituted 50% by written performance and 50% by the student's so-called 'further participation' (*Sonstige Mitarbeit*) (MSB NRW 2020a, § 48). Students in secondary stage I usually have classes in 11 to 12 individual subjects and sit four to six examinations in four of them, which are each between 45 to 135 minutes long (MSB NRW 2020c, § 6). Teachers can also decide to set graded tests, and in arts class, for example, the children hand in pictures that they have drawn instead of taking an exam. The category of 'further participation' on the other hand can include everything from folders that students hand in to presentations that they give, but in practice this grade is largely arrived at by judging the students' oral participation in class. In other words, students are asked to regularly raise their hand in order to answer a teacher's question.

Even though teachers grade oral participation differently and have diverging preferences, it is perhaps unsurprising that 'quantity' and 'quality' of the students' comments are the two factors which were referenced the most in my conversations. The fact that participation counts a great deal (50%) towards the final grade effectively entails that the students' performance on every single day of school, in every hour of class even, counts. It is a common practice and one which students are all aware of, that many teachers grade each student's participation after every lesson. This may take the form of a number grade, a smiley, or a plus or minus which the teacher either jots down in their notebook or fixes in their iPad. Even those teachers who said that they did not have the time to mark every single lesson told me that they graded oral participation at least every two weeks for each student. During every quartile, the students are typically informed once of their current grade for participation.

In any given school year in the secondary stage I then, a student receives a large amount of marks. The children sit at least 18–20 graded examinations (MSB NRW 2020c, § 6). On top of this are the marks for tests which are written throughout the school year. It depends upon the teacher's preferences for setting these, but many of the students that I worked with, wrote between 20 and 30 tests. The four oral participation grades that a student receives per year and per subject yield a total of 44 to 48 grades in any given school year. There are additional marks for various things such as pictures in arts class, presentations, exam corrections, homework, or written reports. Lastly, each of the two official report cards contains the 11 to 12 final grades, depending on the number of subjects. In sum then, students could receive more than 140 grades per year based on their teachers' preferences and their combination of subjects. When I asked students to log their grades throughout the school year, numbers of around 100 to 120 were common. It is important to bear in mind that these are only the grades which are *communicated* to the students –

they do not include the marks that teachers write down after each lesson, as these are never seen by the students, even though they are aware of their existence. It is this ubiquity of grading which made Germany an intriguing context for my research.

Students and their parents are informed of the current marks at various points of the year. As the children sit examinations and tests throughout the year, they are continuously informed of their written results, when these documents are corrected and handed back by the teachers within the space of a few weeks. The children, until they are over 18, have to take the exams home to have them signed by their parents and then show the signature to their teacher. Especially when the marks are low, students often try to avoid showing the exams to their parents. Sometimes they are lucky and the teacher gives up asking for the signature or simply forgets about it. Other students confessed that they occasionally forged their parents' signatures while others said that none of these things were worth the trouble as 'everything comes out on the *Elternsprechtag*'. This parents' consulting day is held twice a year and parents are invited along with their children to discuss how things are going in school. Typically, the two class teachers are present and inform the parents of the marks in all subjects. Depending on the teacher personalities and the student's performance, they are either praised or scolded or both and some kind of aim for the coming term is habitually agreed upon. As was already mentioned, the oral participation grades are discussed four times a year and a common procedure is that once in each quartile, the teacher spends a lesson standing outside in the corridor and students come out of the classroom one by one to be told their grade. Some teachers, however, prefer to 'surprise' their students with a grade on the report without discussing it first; others only disclose it once the deadline for revising marks in the school's databank has passed in order to pre-empt discussion and 'haggling'. All of the marks from the first two quartiles are fixed in the half-term report card and those from the third and fourth quartile make up the final report card.

School types and educational stages differ in their rules of retention, but the basic agreement is that if a student fails to achieve adequate grades on the final report, they must repeat a particular year ([MSB NRW 2020c](#)). In the Gymnasium, this rule applies from year six; in the comprehensive school, students can be retained from year nine.

After year ten, students at the comprehensive school and the Gymnasium can proceed to the qualification-phase of the Abitur if they receive sufficiently high grades and thus the so-called 'Q-Remark' (*Q-Vermerk*). The Abitur or secondary stage II comprises three school years as well as the central Abitur examinations. The first year is called the 'introductory phase' (*Einführungsphase*, EF) and the performance during this time does not count towards the final GPA (*Durchschnitt*). It is at this point that students choose their 10 subjects for the Abitur. Following the EF is the 'qualification phase' (*Qualifikationsphase*) which comprises two years of schooling called Q1 and Q2, respectively (Block I), and the final Abitur examinations (Block II).

Figure 2.1. The German grading scale

Grades	Very good			Good			Satisfactory			Sufficient			Inadequate			Insufficient
	+	1	-	+	2	-	+	3	-	+	4	-	+	5	-	6
Points	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Throughout the qualification phase, students continue all of the subjects from the introductory phase but out of them they choose two majors and two minors for central examination at the end of the two years. The grading system in use for the whole of secondary stage II is the familiar 16-point scale where, apart from the lowest grade 6, all other grades are separated into a higher, lower and middle tier (for example, 1+, 1, and 1- and so on). However, a novelty at this stage of education is that each of the grades corresponds with points ranging from 15 to zero (see [Figure 2.1](#)) ([MSB NRW 2020b](#), § 16).

Students can collect up to 600 points in Block I, and up to 300 points in Block II, all of which count towards the final GPA. In each year, students sit close to 30 graded examinations which are now each between two and four and a half hours long ([MSB NRW 2020d](#), § 14). In those three to four subjects where students do not take exams, they often have to give one graded presentation per quartile instead. This is complemented by quarterly oral participation grades in all 10 subjects (40 per year), into which a range of subgrades can find their way, similar to the procedure in the secondary stage I. Finally, both the half-term report and the final report contain 10 grades each, one for each subject. One of the teachers whom I worked with was actively engaged in the organisation of the secondary stage II and estimated that students in this phase would receive up to 160 grades per year. The students' log books revealed that at least 120 were common. Given that the Abitur phase is made up of two school years, students have received between 240 to 320 grades before they sit their four final examinations. These scores are then added up algorithmically, based on an intricate calculation system with differential weighing, in order to decide if the student will be admitted to the final exams. If a student had received 15 points (a grade of 1+) in every subject and every quarter over two years, this would result in the overall maximum score of 600 for Block I ([MSB NRW 2018a](#)). It is extremely rare for any student to achieve this, especially taking into account that up to 10 teachers have to issue the very highest score for oral participation in all eight quartiles and all of the examinations have to have been awarded 15 points too. If this does happen every once in a while, it is the subject of national news reports (see for example [Vieth-Entus 2016](#)).

After the Easter holidays in the final year, students sit their four final Abitur examinations. The papers, which are between four and four and a half hours long, are set centrally for all of North Rhine-Westphalia and all students with the same subject sit the examination at the same date and time. With perfect scores, students could theoretically collect up to 300 points from them. Based on a conversion table, the overall GPA is translated into a score along a

Figure 2.2. Conversion table from points to Abitur GPA (adapted from MSB NRW 2018a)

GPA	Points	GPA	Points	GPA	Points
1,0	900–823	2,0	660–643	3,0	480–463
1,1	822–805	2,1	642–625	3,1	462–445
1,2	804–787	2,2	624–607	3,2	444–427
1,3	786–769	2,3	606–589	3,3	426–409
1,4	768–751	2,4	588–571	3,4	408–391
1,5	750–733	2,5	570–553	3,5	390–373
1,6	732–715	2,6	552–535	3,6	372–355
1,7	714–697	2,7	534–517	3,7	354–337
1,8	696–679	2,8	516–499	3,8	336–319
1,9	678–661	2,9	498–481	3,9	318–301
				4,0	300

31-point scale ranging from 1,0⁴ (the highest score) to 4,0 (the lowest score) (see Figure 2.2) (MSB NRW 2018a).

The 1,0 score was achieved by roughly 1.7% of the students in Germany in 2017 (Geis-Thöne 2019). In 2020, the average Abitur grade across Germany was in the area of 2,3 (Kultusministerkonferenz 2021).

Alternative, or reform-pedagogy schools typically adopt different systems of assessment. In Rudolf-Steiner schools for example, students do not receive grades up to year ten and even after that, their participation in class is not assessed. Similar rules apply for Montessori- and reform-pedagogy schools. Like all students in North Rhine-Westphalia, those attending alternative school forms do however have to sit the graded central examinations after year ten and for the Abitur (MSB NRW 2018b).

For most students, the main motivation behind completing the Abitur is the entitlement to Higher Education that it entails and in fact, since 2014 more than 50% of individuals of a given age cohort attend university (KMK 2020). Roughly 60% of courses are open admissions which means that anyone with an Abitur diploma can enrol for them – regardless of their grade. In total, 40,7% of courses, amongst them the more prestigious, are admission-restricted (Gehlke, Hachmeister, and Hüning 2019). Students apply for these courses online and have to have at least a certain GPA in order to be admitted. This so-called Numerus Clausus (NC, Latin: ‘closed number’) acts as the constricting factor and is often set locally by universities themselves. What is striking about the German university admissions system in international comparison is that the

Abitur grade is the *sole* criterion for admission, even though ‘waiting time’ after the Abitur can be added to it later. Unlike in the UK, for example, students do not submit references, personal statements, or complete interviews. The only exception to this admissions procedure is highly sought after courses which are necessary to reach a certain profession, notably medicine, dentistry, veterinary medicine, and pharmacology. The number of applicants greatly exceeds available places and therefore admission is regulated centrally by each federal state (Meister, Litschel, and Kirsten 2018). Overall, 30% of applicants for these subjects are admitted in the familiar Numerus Clausus procedure, that is on the basis of their GPA, the threshold for studying medicine currently being 1,0 in most federal states (PraktischArzt 2020). The remaining 70% of places are given to students who may not have reached this grade but are successful in an internal application procedure which also involves some attention to the GPA (KMK 2020). Apart from university admissions, the Abitur grade is of course a crucial factor in applications for jobs, work experience, or scholarships. ‘Being quantified’ via grading is thus not only an almost daily experience for German pupils, but also one which carries much weight for their future.

After having outlined the general features of the German education system, we now turn to the specific context of this study. Chapter 3 discusses the ethos and reality of the comprehensive school as a type, introduces the school where the research took place, and offers a brief overview of my methodological approach.

Notes

- ¹ Education policy in Germany is ultimately the prerogative of each of the federal states and some authors go as far as saying that the country has 16 different education systems (Edelstein and Grellmann 2017). The following discussion is necessarily skewed towards the specificities of North Rhine-Westphalia (NRW), where the research took place. Particular aspects might differ somewhat in other federal states, even though German school education does of course have a discernible basic structure.
- ² It is also worth noting that even the fees for private schooling are usually much lower than in the UK, for example. In 2016, the average annual fee for private education in Germany was €2000 (Grossarth-Maticek et al. 2020, p. 10). In comparison, British parents paid almost £15,000 (approx. € 18,000) per child in 2020 (Clark 2025).
- ³ All names of research participants are pseudonyms.
- ⁴ The decimal point is expressed with a comma in German and I have chosen to replicate this way of writing here for reasons of ethnographic fidelity.

3. Educational realities in a disadvantaged comprehensive school

It was in December 2018 when I first set foot onto the premises of what was to become my fieldsite school. I had previously been in contact with the head teacher via email and we had fixed a date to discuss the details of my potential research at the school. I arrived at the school in the mid-morning and after I had walked a few steps, I turned around a stretch of high bushes and the school yard came into sight, populated with a lively crowd of students – apparently, I had arrived during break time. My stomach turned as I apprehensively approached the boisterous children and exceedingly tall teenagers, for this was a school that I had been warned about. The institution and particularly its neighbourhood had a reputation that preceded it: ‘poverty’, ‘criminality’, and ‘immigrants’ were some of the words that I had previously heard in connection with it. The expression *sozialer Brennpunkt*, was another frequent descriptor: a ‘social burning point’. Thoughts started swirling wildly in my mind: What do I do if one of the students jostles against me? Will they even recognise that I am not a student? I suddenly felt self-conscious about everything from my height to my trench coat and tried my best not to look like a target by walking through the crowd with a steady pace. To my own surprise, I made it through the school yard without being assaulted, possibly without being noticed, and it took some weeks in the fieldsite later to realise that my fears had mostly been the product of exaggeration and urban myths.

My fieldsite was a comprehensive school located in a medium-sized town in the German federal state of North-Rhine Westphalia. In order to situate the pupils’ experiences, it is important to understand both the purpose and reality of comprehensive schools in Germany.

The comprehensive school

Up until the 1970s, the three main types of secondary schools in Germany were, in descending order of social status, the *Gymnasium*, the *Realschule* and the *Hauptschule*. Of the three, only the *Gymnasium* offers the *Abitur*, the A-Level equivalent which allows students to progress to Higher Education after 12 or 13 years of schooling. The diploma after year ten (*Realschulabschluss*), which can be achieved within *Realschulen* and *Gymnasien*, is the prerequisite for attending a vocational school. The *Hauptschulabschluss* can be achieved

after year nine in all secondary school types, at the age of 14 or 15 (Edelstein 2013). Both the Realschulabschluss and the Hauptschulabschluss enable students to seek an apprenticeship in a recognised trade. However, in particular the Hauptschulabschluss as the first and lowest diploma has become increasingly stigmatised in recent decades. Those who have only this certificate are often thought of as ‘poorly educated, lacking drive or orientation’ (Mai 2020).

Historically, the tripartite system is the result of the three-class society in 19th-century Germany (Sinn 2006 quoted in Deutscher Bundestag 2006, p. 4). Children from well-off families attended the *Oberschule* which provided a neohumanist education for the prospective social elite. Only the *Oberschule* offered the *Reifezeugnis*, the school diploma necessary for receiving higher education. The *Volksschule* (lit. ‘school of the people’) was considered as delivering basic education for the lower social classes and the *Mittelschule* was located between the two ends, preparing students for employment in the market created by increasing industrialisation (AG Bildungsforschung und -planung Universität Essen 2000, pp. 5–8). After 1945, East and West Germany developed their education systems differently. The Soviet occupying power put into place a ‘democratic single school’ in order to eradicate those structures that they thought partly responsible for the success of fascist and racist ideologies in Germany. The allies in West Germany had similar plans for abolishing the three-partite system, however, the West German ministers of education and cultural affairs were successful in its defence. As a result, the three-fold structure was agreed upon as the standard for all Western German federal states in 1955 (Edelstein and Veith 2017).

The tripartite education system has long been harshly criticised. The most common argument against it is that the early separation of students on the basis of their performance tends to reproduce social injustice. As already discussed in Chapter 2, official figures support this claim by showing that the lower social classes are significantly underrepresented in the *Gymnasium* (Edelstein and Veith 2017). Moreover, many scholars have contended that a premature filing of students into different secondary school types disadvantages ‘late bloomers’ (Hemetsberger 2018; Maaz and Nagy 2009), as the age of 10 is considered too young to gain a reliable impression of a child’s academic abilities. With a view to remedying these shortcomings, comprehensive schools were introduced into the German education system. The German sociologists Ulrich Bröckling and Tobias Peter argue that two opposing ideologies characterise the current discourse around education in Germany: excellence and egalitarianism. Excellence is the call for training elites and ‘high potentials’ to make Germany competitive in international comparison and dominates the narrative on tertiary education (Bröckling and Peter 2014, p. 130). To a lesser extent, the notion of excellence is also woven into the identity of selective *Gymnasien*. The opposing egalitarian ideal, which Bröckling and Peter take to be prevalent in the discourse on primary and secondary education, emphasises equal opportunities – the notion that every child ought to be educated in

a way that compensates for social injustices. Comprehensive schools in particular are built on this egalitarian ethos.

In 1969, seven comprehensive schools were founded in North-Rhine Westphalia as part of a school trial programme (*Schulversuch*) with the aim to test ways in which the German school system could be recalibrated towards more social justice and effectiveness (Heeren 2019; MSB NRW 2019a). Proponents of the comprehensive school envisaged an institution in which children of all abilities would learn together in a single school. In 1982 however, after the end of the trial, comprehensive schools were officially recognised as an additional type of secondary school, rather than as the only one (MSB NRW 2019a). The year 2019 marked the 50th anniversary of comprehensive schools and at this time, there existed 346 of them all over Germany, with a total of 326,000 students. In contrast, there are 624 Gymnasia with 502,000 students (BMBF 2020a). The comprehensive school offers all types of high school diplomas that can be obtained from other school forms too. Students therefore do not have to decide on a pathway after primary school, but can keep their options open to either leave after year nine or ten, or to progress onto the Abitur, given sufficient previous success. What is more, students cannot be retained until year nine, in contrast to the Gymnasium where students from the age of 12, that is, from year six, have to repeat a school year if their grades are not satisfactory. Students at the comprehensive school do, however, have to sit the same central examination papers as their peers at the Gymnasium for both the Reaschulabschluss diploma and the Abitur.

Educational realities in the comprehensive

During my fieldwork, it became apparent that the ethos of the comprehensive school often clashed with the educational reality of this school type – at least in my fieldsite. Particularly my conversations with Mr Becker, the head teacher, proved insightful in this regard. Mr Becker was a tall and slender man approaching his sixties who, perhaps due to his height, always walked somewhat stooped. He had a friendly face, wore black-rimmed glasses and his white-grey hair was beginning to recede. Mr Becker's language exhibited traces of 'Ruhrdeutsch', a working-class dialect which many Germans associate with unpretentiousness, honesty, and cordiality (see for example Becker 2003) and his friendly but unflinching expression during conversations made people – including myself – talk more than they should. Some of the teachers described Mr Becker as calm, level-headed, or fair, which attested to the generally great respect which he seemed to enjoy amongst his colleagues. After all, the head teacher was the only person in the school to be addressed solely by his last name. In my time at the school, I regularly saw Mr Becker chat to students in the school yard or to teachers in the staff room. He laughed a lot and always had a canny expression in his eyes when he made a controversial statement. His passion for the comprehensive school and its students was complemented with a sober realism about some of the children's systemic

disadvantage. In all our conversations, but particularly during the taped interviews, I was taken aback at Mr Becker's frankness and his outspoken criticism of what he perceived to be the ills of society or school life. When talking about the political status of the comprehensive school, he summarised the issue from his point of view:

In North-Rhine Westphalia, the comprehensive schools were in the first place, in the very first place, meant to replace all other schools. That was kind of the idea. And then a government in the eighties ... did ... well, they decided to keep the compartmentalised school system and to let the comprehensive school, which wants to be there for all children, run alongside. And in a nutshell that is the ... (he sighs) ... that is the fundamental problem of our school form in this federal state. We are ... in terms of our very philosophy dependent upon a heterogeneous body of pupils, heterogeneous in terms of their performance in a way that depicts society as a whole. But the way things developed, the ... let's say ... the high-achievers in the upper third and the leading social classes tend not to send their children to the comprehensive school. They send them to the Gymnasium. Well, and as time went on, this led to the situation we have now, where the comprehensive school has to take in the ... I'll say ... the losers of the compartmentalised system. There's often no other choice, really. And the comprehensive school is usually not chosen by upwardly mobile parents for their children, even though we provide the best conditions, technically, for social advancement.

With frustration resonating from his voice, he went on:

There you have it. And in this sense, the school is actually accomplishing what it ... what this society is in dire need of. But it could do it much, much better if the framework was a different one. In the end we are ... in some way ... a school for the rest (*Restschule*) and that is no good for any of those involved.

Mr Becker argued that the German recommendation system was partly to be blamed for the unequal distribution of students onto school types:

It's these primary school teachers with their verdicts who are responsible for this ... this canalisation of the children. It's them who we would have to reach. They sometimes have such starkly evil preconceptions of the comprehensive school as a type. These women, you know (he grins). And in the recommendations, this is *always* reflected. They have a systematicity of sending us the problematic children. Those who are not OK in terms of performance,

who are not OK in their social behaviour. They'll say: "You go to the comprehensive school." That's how it goes.

Dissatisfaction with and sometimes even an outright dislike of the school's clientele was a common topic in my conversations with teachers. During a brief exchange in the teacher's room, an older member of staff said to me:

But really, these students don't do anything. They're just lazy. It would be way better for everyone to learn together. So that you don't send the good ones to the Gymnasium and we get the rest. They are all dragging each other down. That's how it is, we just have a high concentration of idiots (*Schwachmaten*) here.

The students themselves were often also acutely aware of what they perceived to be the relatively low prestige of comprehensive schools. In our interviews, many told me that they would not have dared to go the Gymnasium because it would be 'too difficult', 'too fast', or 'too strict' for them. Many of the students felt inferior to those from the Gymnasium, as became, for example, apparent one morning in Mr Wegener's philosophy class full of 14 to 15 year olds.

In order to get the class quiet, Mr Wegener said: 'We'll conduct a thought experiment now and it is so drastic that it's quite difficult to pull off. OK, imagine this is a Gymnasium.' There was an immediate turmoil, some of the students smirked, others huffed or shouted: 'Oh God!' and 'As if!'. One of the pupils said: 'That's not our level,' and Mr Wegener replied loudly: 'Yes indeed. You can say that again.' He sported a wide effect-seeking grin in my direction and some of the students turned their heads as if to check what I thought about this. I smiled back tentatively.

Maria, a clever and thoughtful 18 year old also referenced this felt inferiority. She had transferred from a Gymnasium to the comprehensive school a few years back because of her low grades and told me that it had been difficult for her parents to accept this fact.

So for me it was difficult in the sense that ... that I had the feeling ... I don't know if it really was like that but I just had the feeling ... that my parents did sense this descent. Well, it did hit them relatively hard in my opinion. And then the focus was ... let's say ... as I was used to as the eldest child ... the focus was no longer on me to begin with. My parents just ... my parents said things like: 'If you get a 1 in that school in some subject, what is it really worth? You don't have to do anything for it.' Like that. And then this kind of appreciation was gone to begin with, I'd say. [...] Yes, so it was kind of difficult for me to accept. For example, my sister is now in the Gymnasium and she's super successful ... and ... just the perfect child in that sense. And I was ... I only felt like that of course ... presumably it wasn't even like that ... written off.

Maria later received one of the highest GPAs of her entire year in the Abitur, out of roughly 100 students. Mr Becker argued that the best way to redress the lower social status of comprehensive schools would be to dissolve the tiered school system in their favour. He added:

And I would give every school the right to nail on a sign outside on which it says 'Gymnasium' because it is so incredibly important for the parents ... for their own social prestige ... to have their children there. And yes, to get kudos for that.

The fieldsite

The school where my research took place was founded and built in the 1990s in an economically strong and thus comparatively wealthy part of North-Rhine Westphalia. Being the educational home to over 1200 students, taught by approximately 120 teachers, the school's main building reflected the size of the student body. It was a large white complex with flat steel roofs and elements of steel on the outer walls as well as large window fronts in grey frames. The three-storey building comprised what teachers referred to as a set of 'teeth' or 'towers', that is three building parts which ran perpendicular to the main rectangle. The school also had a large separate sports hall, painted bright orange, and several metal containers in which the students from year eleven were taught due to a lack of space. When talking about the infrastructure of his school in an interview, the head teacher lamented that it was the result of a 'true austerity programme'. The school had the smallest classrooms of all schools in the city and, as Mr Becker pointed out,

some children can't even claim two square metres for themselves. In Bavaria this would mean that teaching is illegal. But this is North Rhine-Westphalia, there are no set sizes. For henhouses they exist, I believe (he laughs). [...] There are creatures who are being protected in this way ... *But. Not. Our. Children.*

Arguably the areas most loved by students were the two school yards, one in front of the main building and one behind it. The space between the 'teeth' offered ample opportunity for meeting and chatting with friends, as did a long row of bushes which separated the school grounds from a nearby pedestrian path. Especially the boys made use of the spacious plastered school yards for playing football and the ping pong tables were in hot demand during every break. The excitement of break time continued within the building when the hallways were packed with an animated stream of students who made their way back into their classrooms.

Over and above the infrastructure, it was of course the people who shaped my fieldwork, and the ethnographic context is thus perhaps best understood

through the students, parents, and teachers. The school was located in a rather deprived area of town. In Germany, there exists a five-point scale which distinguishes types of secondary schools based on their locations. The scale does not measure the students' or the school's performance – and is thus generally not communicated publicly – but is rather a marker for the kind of people the school primarily attracts. My fieldsite school occupied the lowest rank, five, even though many of the teachers, let alone parents or students, were not aware of this. As stipulated in the official guidelines (QUA-LiS NRW 2017), a school of a location type five is characterised by an average percentage of students with a migration background of around 60%. In some of the classes that I engaged with it was as high as 92%, meaning that there were only 2 out of 25 children whose parents were both born in Germany. Overall, students from 55 nations and with 34 different native languages attended the school. Apart from the German pupils, many of the students whom I worked with were either born in or had parents from Kazakhstan, Russia, Poland, or Syria. Others had family links to Turkey, Lebanon, Afghanistan, or Iran. In the youngest cohort that I worked with, over 50% of the students had a family background in the Middle East and an Islamic faith. The majority of students of a school location type five live in flats which are located in areas with disproportionately high levels of unemployment or incomes that lie far below the national average. In the interviews, I found out that many students had parents who were in fact out of a job or had low-income or low-prestige occupations such as cleaner, bus driver, or factory worker. Especially during my first few weeks in the fieldsite, I noticed that as students in Germany do not wear a school uniform, fashion provided an interesting reflection of the students' social background. In stark contrast to the more conservative style which I knew from the Gymnasium, many of the students were wearing jogging trousers and other pieces of ath-leisure apparel to school. There was also a prevalence of dark colours amongst the teenagers, a conspicuous lack of branded clothing and many of the younger students wore T-shirts with random stock images and text ('Cold is cool'; 'No Rules – No Limits'; 'Chillax'). The aspect of fashion was sometimes explicitly addressed in interviews with older students when they said that they had not considered going to a Gymnasium partly because they had heard that students were judged by their (un)branded clothing there.

As described above, secondary school choice in Germany depends in great part on the recommendation of school type by the primary school teachers. In the interviews, I heard that the majority of students at this school had been recommended to attend a Realschule or comprehensive school and had followed this advice. This mirrors the official figure of about 70% of students in comprehensive schools in North-Rhine Westphalia who did not have a recommendation for the Gymnasium (Heeren 2019). Quite frequently, this correlated with a family background of low socio-economic status, something which Mr Becker also pointed out in an interview when he said:

Well, even us teachers are, I think, not completely free of our social prejudices. When I see: 'Oh, there's a child from such a great home,

with a library and so on and so forth', then ... it's already been shown for the recommendations, that primary school teachers put their social prejudices in the school form recommendation. Very often. The children have mediocre grades, but great parents with great jobs, and they'll get the recommendation for the Gymnasium. And if the children have pretty good grades but the parents are socially weak, then they'll get the recommendation for the Realschule or what have you.

Despite the funnelling effect of the recommendation system with regards to background, I noticed that there was some degree of heterogeneity in the student body, as would be expected in this school type. A small but significant group of students had received a recommendation for the Gymnasium and had attended it for a few years before dropping out, generally due to insufficient grades. Mr Okermann, the sixth form coordinator, called these individuals 'failed Gymnasium students' (*gescheiterte Gymnasiasten*), but many of them were now the top-performing pupils in their respective classes. Lastly, a few students attended the comprehensive school because their parents had decided against a recommendation for the Gymnasium. Some of the students from this group told me that their parents liked the idea of all children learning together and the less elitist or less competitive flavour of the comprehensive school. Apart from students from a low socio-economic class, there were thus a few students in each cohort whose siblings went to the Gymnasium or whose parents were, for example, architectural draftsmen or -women, engineers or primary school head teachers. It is because of this, albeit small, variety that the teachers I interviewed were adamant that their school could not be likened to 'problem' comprehensive schools in the large urban centres of the Ruhr region in North Rhine-Westphalia, such as Essen or Dortmund – even though they may share the same location type number.

The dynamics of educational injustice in Germany, combined with the students' social background make it so that a significant proportion of the pupils at my fieldsite school struggled academically from the start, often through no fault of their own. Given that cohort-referenced grading tends to be subconsciously adopted by teachers, there were almost always all grades represented in a given exam result, but nevertheless most of the students' results tended to cluster around the middle to lower end of the scale. Very low grades, even in the first year of secondary school, were not a rare sight here. As a result, many of the students did not progress to the Abitur but rather left school after year nine or ten. A German and arts teacher was particularly forward about his views on the studentship. While we were walking to the parking lot after a school day, he complained that the students' level of competence was constantly sinking. When I said that that must be quite exhausting and frustrating for him, he answered: 'Yes, I'll put it this way: What I tell the students today, they'll have forgotten by tomorrow, you know. It's like in a production chain. As if I was screwing together a piece only to hand it to the person next to me

who takes it apart again. You can imagine how happy I am when I go home in the evenings.' I didn't quite know how to respond to this and said generically that hope is always the last thing to die. The teacher responded bitterly: 'Yes, of course, as always.' After we had said goodbye, I turned around to see that two year ten students standing nearby had stopped in the middle of their conversation to listen in with their eyes wide open.

In one of the interviews, I asked the philosophy teacher Mr Wegener to describe his school. He sighed and said: 'Here you have to raise students. You're occupied more with educating than with teaching.' He added: 'I always say to our trainee teachers: If you make it here, you'll make it at any other school within a radius of fifty kilometres.' That teaching this school's students was particularly tough and challenging was a sentiment that all of my interlocutors from the staff group shared.

Despite the difficult circumstances, the head teacher Mr Becker proudly explained that some of the students of his school had been led to extraordinary success. He talked about students who were the first in their family to obtain the Abitur and his face lit up when he told me about a former pupil who now held a doctorate and a seat in the German Bundestag. Mr Becker also said that his school enjoyed a good reputation with the school authorities and that its systemic contribution was highly valued, as was reflected in the frequent visits by the mayor and important secretaries of state. 'But I have to watch out,' Mr Becker added 'that this does not turn into a kind of cynical pat on the shoulder, saying "you can do this"'. This is maybe a general tendency in our federal state ... "the comprehensive schools, they'll be alright".

Many of the teachers whom I spoke to during my fieldwork complained that most of their students were unmotivated, lazy, and did not care about school. This problem was often traced back to the family home. On my very first day of fieldwork, I attended the teachers' barbecue at the end of the previous school year in the summer of 2019. I got into a conversation about the school and the parents with a middle-aged physics teacher with her hair dyed the colour of a fresh carrot. She said: 'We mostly have flop-parents here. They don't care about their children at all and they don't show up for any parent evening.' She went on to say that school policy was therefore influenced almost exclusively by and in favour of the few middle-class parents who served on the parents' committee. When I later cross-checked the last names of those on the committee, it was striking to see that they corresponded neatly to those of some of the school's most successful students. Only recently, the IT teacher told me, the respective parents had abolished a rule which prohibited older students from leaving the school grounds during the breaks. She said: 'You see, it's fine if their well-behaved children spend the breaks elsewhere. The other children go to *Netto* [a German discounter chain] and when they come back with ten bags of crisps, eight of them are stolen.' I laughed but the lady added with a stern expression: 'That's embarrassing for our school.'

Throughout the following school year, many teachers bemoaned the lack of engagement of most parents in the school. The usual explanation brought

forward for this was that 'they just don't care.' It was very rarely the case that other reasons such as a lack of German language skills, unfamiliarity or bad personal experiences with the school context, or a demanding work-life were considered. I also discussed the nature of the school and parents with the in-house social workers. One of them, Mrs Lemper, told me that she frequently made house visits in the area, for example if children did not show up for school for a long time without being excused. Mrs Lemper said that her husband was worried about her making these visits alone as, she added 'we have a strange clientele in this area. How do I know what kinds of drugs they have taken or which alcohol they're inebriated by?' A few weeks back, Mrs Lemper had been grabbed by her arm and pulled into the hallway of a house by an aggressive father whom she had visited to enquire about his child. Even though she came out of the house unscathed, the social worker concluded by saying: 'You do peer deep into the abyss sometimes here. You have to have strong protection mechanisms to not let it get to you and you cannot save everyone.'

With regards to grades, some teachers told me that there was a stark difference between the litigious parents at the Gymnasium and those at this school who hardly ever appealed grading decisions. One of the teachers said that the parents from the upper echelons of society would immediately seek a dialogue with a teacher if their child received a three or four in the final report at the Gymnasium. In contrast, the parents of his students would not be bothered even if their child received a five. Other teachers also told me that in their many years at the school, they had hardly been asked to revise a grade, but that they knew from colleagues at the Gymnasium that even quarterly participation grades were appealed there.

About 120 teachers worked at my fieldsite school and given the large body of staff as well as some degree of fluctuation, most of the teachers did not know all of their colleagues. The staff included trainee teachers (*Referendare*), who stay at the school for one and a half years, parallel to taking some training courses at university. Studying two or three subjects at university with a view to becoming a teacher (*auf Lehramt*) is the most common pathway to teaching in Germany. Apart from the chosen subjects, prospective teachers choose their school type – Gymnasium and comprehensive school are combined for this purpose – and are trained in pedagogy and educational sciences too. While many of the teachers whom I met had in fact studied towards this profession, some had also quit their industry jobs in favour of working at a school. In this school, a full-time teacher taught and graded around 150 different students per year, distributed across their two or three specialty subjects. Many members of staff were also class teachers (*Klassenlehrer*), meaning that together with a colleague they were responsible for accompanying a given class from year five up to year eleven when the Abitur phase starts.

In the interviews, I always asked students about their favourite teachers and there was a high degree of overlap in the answers. The teachers that the children mentioned were 'cool' or 'funny' or 'nice' in their eyes and they liked

going to their classes. Also Mr Becker and Mr Okermann made it clear that they had stellar teachers in their school who 'bring students forward and where the children notice that they are dealing with a person who judges them benevolently.' Nevertheless, many of the teachers whom I spoke to were also convinced that there were colleagues amongst them who were unsuited for the job. One of the teachers also referenced a difference in teacher personalities from the Gymnasium when he said that with his direct and sometimes provocative manner, he 'would certainly have bigger problems in the Gymnasium.'

In the teacher interviews, I always asked my interlocutors to characterise their school. Mr Bilke, the biology teacher of the final Abitur year (Q2) answered that, in a nutshell, it was not a school which could select the students based on a predefined ethos or programme. Rather, teachers had to work with who was there. Interestingly, this was also how the head teacher described the selection of some of the teachers to the school. He was especially direct about this in our first meeting, when he lowered his voice and said: 'The English teachers have become so bad. In my school too. Apparently, you do not need any skills any more to become an English teacher. It's catastrophic. They know nothing.' Mr Becker concluded that despite this, he had to appoint some unsuitable applicants because there were simply no better candidates to fill empty positions with. Mr Becker also attested to the difficulties of teaching in his school when he said that even though the system of the comprehensive school accomplished something by helping students forward, he was also concerned about his teachers: 'I do have the feeling that many of our teachers are being left behind. There are many colleagues, older female colleagues ... this is a particularly notable group ... that I would classify as in danger of burnout or affected by burnout.'

In sum then, my fieldsite school was characterised by a studentship whose members, although there was some degree of diversity, were often familiar with experiences of either deprivation or migration or both. Their parents were largely conspicuous by their absence, at least on the school premises, and many of the teachers agreed that their working life presented them with a daily endurance test.

An ethnographic approach to being graded

This book seeks to provide an account of the lived experience of being quantified through the school grade. Ethnography as a method is an ideal tool to do so holistically. As Emerson et al. put it, the ethnographer needs to

recall observed scenes and interaction like a reporter; to remember dialogue and movement like an actor; to see colors, shapes, textures and spatial relations as a painter or photographer; and to sense moods, rhythms, and tone of voice like a poet' (Emerson, Fretz, and Shaw 2011, p. 34).

Researching grades comes with a specific problem: their familiarity. Almost all of us have been graded in our lives, usually from a young age, and it is difficult to look at the phenomenon with fresh eyes, or indeed to perceive it as worthy of investigation to begin with. Ethnography is an especially potent means to achieve just this by ‘making the familiar strange’, as the well-known dictum goes (Mills and Morton 2013, p. 29). The journalist and former editor of the *Financial Times*, Gillian Tett, once argued that her education in anthropology helped her to understand the City:

[...] if you come from an anthropology background, you also try and put finance in a cultural context. Bankers like to imagine that money and the profit motive is as universal as gravity. They think it’s basically a given and they think it’s completely apersonal. And it’s not. What they do in finance is all about culture and interaction’ (Barton 2008; cited in Engelke 2017).

What money is to the City, grades are to education. Since most of us spent a prolonged and formative time in education, we have had to learn to trade with this particular currency and it may thus very much appear to us as a given. Ethnography is uniquely suited to break up this black box, to deconstruct the grade and to see it as a cultural artefact rather than as a natural fact.

Throughout the fieldwork, students were my main interlocutors. This may seem like a natural choice, but engaging with the pupils’ view differs, in fact, from the approach taken in much of the literature on grading, where the voices of teachers and experts on assessment take centre stage. A similar tendency for neglecting the standpoint of those receiving numbers can be observed in current quantification studies more generally. Moreover, children and adolescents are an underrepresented – some would argue marginalised and ignored – group of research participants in both anthropology (Hirschfeld 2002) and education (Reay 2018). That they are either not heard or not taken seriously is a systematic issue in other contexts, such as clinical encounters, too (see for example Carel and Györfy 2014; Murriss 2013). Placing the young people’s perspective at the heart of my ethnography and providing a platform for their experiences was thus not only meant to contribute to a rounded picture of grading and quantification but also to a more diverse picture of the interlocutor in anthropology.

My main focus was on three selected classes: a biology major with the final year students (aged 18 to 20); a year nine philosophy class (ages 14 to 15); and initially an English class with a year five (ages 10 to 11), although I later went to many of their other lessons too. I also interacted with teachers and parents via interviews and many informal conversations, for example on open days, parent-consulting days, in the staffroom and on the corridors. Where the adults’ perspective was crucial for my research question, I have included it in the following chapters. I have, however, made a conscious effort to reserve most of the space for my main participants, the children and young people,

as they had most to offer in response to the question of what it means to be quantified.

During the course of the year in the field, I aimed to remain in a liminal place, somewhere between staff and students. My age certainly helped in this regard, for at 27 I was roughly the age of a trainee teacher and yet 'only' seven to nine years older than the Abitur students. One morning, a boy from a neighbouring class came to visit his friends in year five before lessons started. Upon seeing me, he stopped dead, eyed me up and down and then whispered to Mehmet 'Is she a teacher or not?' Mehmet jumped at the opportunity and proclaimed, using a somewhat peculiar phrasing, 'She's one of us, she's just long.' When the other boy left the room, he was evidently unsure whether Mehmet was pulling his leg or not. A year five teacher burst into uncontrollable laughter because she only noticed me in class when I stood up with the children to say 'Good Morning', and the difference in height became apparent. I was also shouted at by a teacher for 'loitering' in the hallways during a break. It was only once she saw the set of keys in my hands that realisation dawned upon her and a rather awkward exchange of mutual apologies and assurances followed. Despite occasional unpleasantness, situations like these are perhaps as close as one can get to an emic perspective when researching school life. They also gave me a renewed appreciation for the fundamentally respectful treatment one tends to take for granted as an adult.

The two main pillars of my ethnographic work were qualitative interviews and participant observation. I presented my research project in each of the classes and explained that I was interested in what students thought about grades and what their experiences were in this regard. I encouraged all students of a given class to take part, stating that I was interested in everyone, not exclusively those who, for instance, particularly liked or disliked grades. Where informed consent was given both by the students and their parents, I conducted initial and follow-up interviews adapted to the pupils' ages, always employing a receptive interview style to give my interlocutors a 'large measure of control in the way in which they answer' (Wengraf 2001, p. 155).

While interviews are invaluable to get a first-hand account of the research participants' thoughts on a particular matter, they also come with several drawbacks. Firstly, they only provide a 'snapshot', insofar as they are limited to a singular moment. What is more, even if the researcher and interlocutor are well acquainted with one another, the interview situation is never a fully natural one. The knowledge of being 'on the record' can lead participants to answer in a way that seems socially acceptable to them and to choose their words with much deliberation. Long-term participant observation and immersion in the field is a crucial constituent of ethnographic work because it allows the researcher to offset these effects to some degree. Being present on a day-to-day basis offers the opportunity to track long-term developments, to witness the interlocutors' behaviour *in situ* and to triangulate the latter with the insights imparted in the interviews.

I followed Emerson et al.'s conviction that the researcher should not be a fly on the wall but be engaged actively in the field (2011, p. 4). For the whole year, I sat in class together with the students – often in the chair of a pupil that was missing on any given day. This gave me the chance to sit next to almost every student in class at some point, to talk with them all day long, to look at the things they wanted to show me (personal possessions, pictures, WhatsApp messages, tests, exams, and so on), and to literally share their perspective. Especially in the younger classes, the question ‘Miss, can you sit next to me today?’ became a frequent occurrence, particularly on exam or test days because I gave hints when the teacher was not looking. During periods of more or less silent work, I always got up to walk around the room and help the younger students with their tasks – or to simply chat to them. I spent the breaks outside with the pupils, hung out before class and shared part of the way home with them. I also had a permanent seat in the staff room where I socialised with the teachers. Apart from daily school life, I took part in a wide range of events, for example going on excursions, sitting in on so-called ‘talent scouting’ counselling sessions organised by the local university, and participating in teacher conferences and in the staff away day. I also gave several presentations on studying abroad or applying for university scholarships.

I could write at length about the challenges I encountered with participant observation. A common problem throughout the fieldwork was that some teachers felt under scrutiny, justifying their alleged failings in teaching and grading repeatedly, despite my assurances that I was not out to ‘expose’ anyone and that my main interest was in the pupils’ experience. Nevertheless, I was at times deliberately kept out of the loop by some teachers, for example with regards to when consultations would take place. In the youngest class, information overload was a challenge, having to manage conversations with several students at a time whilst trying to listen to an interesting exchange taking place further away. The opposite was true of some lessons with the final year. The students were all willing to talk openly in the interviews when alone but in class it was often so quiet that the scratching of my pencil was rather awkward.

Part of my research was built upon critical moments, that is events or times in the academic year when grades were the key concern and at the forefront of the pupils’ awareness. There were many such moments and I made sure to be there with the students when they occurred, so that I could ask questions about grades when they were most relevant. This, I hoped, would make it easier for my interlocutors to access their experiences and to relate to them as they happened, rather than trying to recall them at a later stage. Examples of critical moments were the times shortly before an exam was sat or received back or the end-of-term discussion of oral grades. I was also with the Abitur students before, during, and after their final oral exams, on results day, and on the day of the leaving ceremony. I sat in class with the 10 to 11 year olds when they received their first ever grade in the new school, during tests and exams, and when they were issued their report before the summer holidays. I also visited a careers’ fair with year nine, sat in on several grade conferences,

parent days, and observed countless student consultations. The combination of interviews with observation of both the institutional every-day as well as significant moments allowed for a nuanced picture to emerge of what it means to be quantified through the school grade.

A piece of scholarly writing resembles a painting in many ways. Thus far, I have provided the intellectual frame for my research, and I have painted the ethnographic background. I have also briefly discussed my methodological choices, thereby laying out my tools. It is now time to embark on the motif of this work: the lived experience of being quantified. In the following five ethnographic chapters, I will outline, colour in, add layer and detail in the quest to represent a multidimensional reality in a two-dimensional medium. My work is certainly not the first to depict social quantification but it seeks to do so from an unusual perspective –that of the individuals receiving numbers. Ethnography, then, is perhaps best understood as standing next to one's informants and trying to paint what they see. No painting is ever truly finished. One could always come back to it and add more details but at some point, one needs a bigger canvas. More practically, one could pick up a new one. My final chapter, [Chapter 9](#), a meta-level discussion of the morality of quantification is thus intended as a sketch for future work.

4. ‘*What did you get?*’ Lateral and hierarchical visibility through grades

I initially met Jarek in late August 2019, on the first day of the school year. Mrs Schröder, one of the advisory teachers for the Abitur class had allowed me to shadow her throughout the so-called ‘consulting day’ during which each of the 108 students from the final year (Q2) was to have a short counselling interview about their Abitur and vocational plans. As we made our way out of the staff room, Mrs Schröder said that she was stressed because there were only two teachers, herself and her colleague, to ‘get through’ all of the students that day. As we reached our final destination, I was surprised to find that the consultations would take place out in the corridor of the ground floor. Mrs Schröder and I took a seat at one side of a bright yellow table with attached benches. Groups of excited and tiny-looking year five students were scooting around us (‘Probably the school rally,’ Mrs Schröder said) and loud drilling could be heard from nearby (‘They didn’t finish the building works in time for the school year.’). We settled down, the Q2 students already lining up a bit further away, and Mrs Schröder said to me: ‘I hate these tasks. You spend a whole day sitting here and it doesn’t help at all. We mostly just do this to make a good impression on the audit people this year.’ She opened her old purple HP notebook and brought up a large Word file with a form for each student in it. Mrs Schröder called up the first student, a blonde girl with a round face, to sit opposite us and started asking a rapid series of questions while hacking the answers into her laptop. Each of the consultations lasted about three to five minutes, so there was no time to introduce me. In a procedure that resembled the quick-fire round of a quiz show, I watched a seemingly endless succession of students sit down and answer the unchanging questions: Do you have your latest report card with you (only about half the students did)? How many hours of class did you miss last year? Were you excused for them? Do you have any deficits?¹ How many? Have you done an internship? Are you planning to do one? What are your plans for the time after school? I noticed that many of the students had missed a great amount of school hours, had deficits and mostly were without orientation as to their vocational future. Where career aspirations were cited, these were usually law or medicine.

There was an immediate sense of difference as Jarek sat down opposite us. He was relatively short, somewhat stout and had a reddish face on which he wore thick black-rimmed glasses. Despite sitting rigidly upright, Jarek kept his gaze down to the table, apparently unable to make eye contact with either his teacher Mrs Schröder or me. His face carried a stony, unsmiling

expression, his lips pressed tightly together. ‘Do you have your latest report card with you?’ Mrs Schröder asked. ‘Yes, I have it here,’ Jarek replied with a faint Eastern European accent, picking up a clear plastic folder in front of him. As he extracted his report from it, I could see that his hands were shaking heavily. Without being asked to, he turned the document upside down and, with trembling fingers, pushed it over to our side of the table. I could not help but look at the piece of paper, despite feeling uncomfortably voyeuristic for it. Without any forewarning, I was peering into the life of a complete stranger whom I hadn’t even looked in the eye yet: his grades in all subjects from the past one and a half school years, exposed to me – a person of whom he neither knew the name nor role.

Seeing with numbers

By decontextualising and simplifying, quantification can reduce a whole wealth of information into a single figure. This product, often a number, makes it easy to almost instantly grasp what it represents or claims to represent. As a visualisation of data, numbers are thus situated between text and image and it is in this capacity that they can foreground certain aspects that might be overlooked in a more complex form of reporting. In other words, quantification creates visibilities.

The link between quantification and visibility has been noted in accounting studies, particularly. As Miller notes: ‘Accounting accords a specific type of visibility to events and processes, and in so doing helps transform them’ (2001, p. 393). With the spread of quantificational techniques into other spheres of life, the literature on them has also proliferated and a variety of authors now demonstrate the power of numbers to determine what is seen. In his work on calculative practices in human resource management, Vormbusch argues that calculation has ‘the task to make the not directly measurable, non-visible as well as the future visible and negotiable for those involved [...]’ (2012, pp. 24–25, own translation). Bläser similarly observes in relation to real estate investment that ‘numbers create visibilities, which serve as the basis for organisational action and decision-making’ (2017, p. 84, own translation), whereas Espeland and Stevens discuss metrics such as the Gross Domestic Product, the DOW or DAX and conclude that ‘quantification makes visible people, objects or characteristics that may formerly have been invisible’ (2008, p. 415). There is a tendency, also in the vast literature on the audit culture (see for example Shore and Wright 2015; Strathern 2000a) to only deal with visibility as a constituent of what is often the main subject of interest: transparency. The two notions are, however, not equivalent. While visibility refers to the feature of being ‘seeable’, transparency is rather evoked when questions of understandability are discussed. The material metaphor of transparency is perhaps somewhat misleading, as it suggests that a transparent entity becomes itself ‘see-through’ and thus *invisible*. This is however not the way that the

term is employed in the context of audits and accountability. Here, if an entity is transparent, its inner workings are exposed in such a way that they can be understood and thus subjected to scrutiny (Tsoukas 1997, p. 835). The notion of visibility however, is often neglected in this line of work and passed over quickly in its role as the first step towards transparency (Stohl, Stohl, and Leonardi 2016, p. 125). In other words, an entity needs to be seen before it can be opened up. With their focus on transparency, it is perhaps not surprising that many of the authors above have focused on the traditional subjects of audit efforts: institutions, programmes, structures, or services. Where the visibility of humans through numbers is addressed in some quantification literature, it is then often in relation to social groups. A case in point are McKinsey's statistics on homosexual activities which made socially evident the group of homosexuals through a 'statistical community' (Igo 2007 quoted in Espeland and Stevens 2008, p. 413). In contrast to the existing transparency and quantification discourse, the chapter at hand is concerned with the way in which quantification creates the *visibility* of the *individual*.

A scholar who has written extensively on this aspect is of course Michel Foucault. Particularly in *Discipline and Punish*, he argues that visibility is reversed in the age of disciplinary power. Where it was previously the ruling authority which basked in the light of the public, it is now those who are dominated that are cast into view. As Foucault puts it:

Disciplinary power [...] is exercised through its invisibility; at the same time it imposes on those whom it subjects a principle of compulsory visibility. [...] It is the fact of being constantly seen, of being able always to be seen, that maintains the disciplined individual in his subjection' (1991, p. 187).

For Foucault, it is particularly the technique of the examination in which disciplinary power combines the 'unavoidable visibility' (1991, p. 198) with individualisation. The examination is thus 'a normalizing gaze, a surveillance that makes it possible to qualify, to classify and to punish. It establishes over individuals a visibility through which one differentiates them and judges them' (1991, p. 184).

In my discussion of how the individual is placed in sight through quantification, I differ from Foucault in two crucial ways. Firstly, while disciplinary power is focused, although not limited to, active surveillance, I am here interested in its precondition, that is bare visibility – the individual's state of being on display. Secondly, even though Foucault acknowledges some degree of 'lateral observation' (1991, p. 176) in a disciplinary regime, he focuses mainly on hierarchical surveillance from top to bottom. In Foucault's famous interpretation of the architecture of Bentham's panoptic prison, this is reflected by the fact that inmates are each confined to their cells, crucially unable to see each other, but being watched by the guard in the central tower. In addition to the watchful scrutiny by teachers and parents, lateral visibility among peers is however a key

component of visibility through grading. In metaphorical terms, the cell's side walls in the Benthamite prison would be made of glass too.

In the following, I explore how quantification in grading at once creates, and exposes in different ways the successful, failing, and mediocre student. Any attempt to perfectly define the increments of performance 'success', 'failure', and 'mediocrity' is doomed to fail, as they are notions which blend into one another, and are fundamentally relative to the context that they are employed in. How then are we to understand what constitutes a successful, failing, or mediocre student? In the school, I encountered many ideas on this. One of the teachers for example said to a pupil: 'The best student is the one who knows least to begin with and most in the end.' Others – teachers and students alike – stressed the importance of effort over actual achievement and especially among the teaching staff, there was a professed conviction that a child's educational success should be judged against the backdrop of their social circumstances. However, despite the existence of such more or less fully elaborated philosophical views, my fieldwork also showed that the school is above all a context in which success, failure, and mediocrity are clearly defined via the marking scale. Teachers and students overwhelmingly stated, and acted in a way which suggested, that the grades 1 and 2 constitute success, that a 3 is average, and that a 4, 5, and 6 are markers of underachievement. So even though there exists a six-point grading scale, three categories of performance prevail in operational terms. It was also striking to observe that a mark not only constitutes a judgement of a single performance but also creates the successful, failing, or mediocre student, respectively. In the following, I shall explore how these individuals and their performance are made visible to others through quantification in grading.

The (in)visibility of success, failure, and mediocrity through grades

Spotlight on success

After I first met Jarek, I asked several teachers about him to find out more. Mrs Schröder told me that she thought him highly intelligent, that he was talented in many areas and active in a range of extracurriculars from historical projects to the school's ambulance service. She also suspected that his parents put great pressure on him and that he compared himself to his successful older brother – even though Mrs Schröder did not know what the latter did for a living. Other teachers attested to Jarek's superior cognitive skills as well as a 'slightly autistic' nature, and his nickname among the staff, a play on his surname, was 'Professor Sobota'. I was also told that Jarek had been suffering with stress-related health problems recently.

Because he differed so strikingly from many other students in the school, I invited Jarek for an interview, even though he was not in the Q2 biology class that I worked with. With his articulate and reflective manner, he soon became

a key interlocutor with whom I had many follow-up conversations. Jarek's parents were both from Eastern Europe, but he himself was born in Germany. Jarek was quick to point out in the very first introductory sentences of our interview that his parents would have had the 'permission' to get tertiary education but that they could not do so because they had left their home country as soon as possible after the opening of the Iron Curtain and had struggled with the language barrier in Germany. Jarek himself had had severe language problems in nursery and primary school, as he only spoke his mother tongue at home. As a result, he had received a relatively low prediction for a diploma after year nine or ten and chose to attend a comprehensive school to obtain it. His former class teacher told me that Jarek did not speak at all for the first few years in secondary school 'and cried every day.' Eventually though, Jarek's grades in many subjects were so high that he was offered to skip year ten and to go straight into the EF, that is the first year of the secondary II stage, leading to the Abitur. Jarek was now widely recognised to be one of the best in his year.

Visibility, and especially lateral visibility of success towards peers, became a recurrent theme in my interviews with Jarek. An example in point is the following excerpt where he talked about the moment of receiving back a graded exam in class:

One of the things that bothers me personally with this ... is not the fact that I get a grade, because that's just feedback, you can somehow use it too. What has always annoyed me is this 'What grade did you get?' and 'What grade did *you* get?' And who has the ... who has the best grade now? Because that creates a pretty strong social pressure. We are ... that simply shows how big this competitive fight is sometimes. And generally as a student who does a bit more, the students like it to compare themselves to you. Because they can say 'Ah, I was just as good' Or 'Ha! I was better!' Personally, I just find that childish and that's why I always do it like this ... when I get an exam, I put it into my bag immediately. I say that ... 'That's none of your business' and I always look at it alone at home because that lowers the pressure significantly.

Jarek here points out several key characteristics of quantification in the school context. Firstly, among themselves, peers are always keen to learn how someone else did on a given occasion and can do so easily by asking for the grade. No complex explanation or the reading out of a text is needed; a clear and simple figure answers the question. Given enough spatial proximity, it suffices to look at one's neighbour's exam. As a result, Jarek, who said that he did not want to share his results, had to resort to physically hiding his marked paper from view and only opening it in the protected space of his home – away from the floodlight of the public, as it were. Interestingly, it was a widely known fact among the Q2 students that Jarek had stellar grades, which indicates that his strategy did not conceal his results altogether. Secondly, and

closely related to this point, Jarek argued that the other students were particularly interested in his grades because they saw him as ‘a student who achieves slightly more.’ This suggests that grading not only quantifies an individual’s success, but also creates the successful individual who becomes a reference value, a benchmark for a certain standard. Given that the grading scale effectively introduces competition among students through ranking, the successful student symbolises the upper end of the achievement spectrum, against which one’s own success is to be measured.

In a later interview, I asked Jarek if he saw any differences between text and number grades. He linked the phenomenon of his visibility through grades directly to quantification when he said that it was the nature of numbers that made them more difficult to hide than written reports:

I do think in any case that numbers make a *much* clearer ... much faster and clearer statement, than a text. Because a text ... you have to read yourself into it, you have to ... sit yourself down, read it, understand it, interpret it. And such a number is an instant statement (*Sofortaussage*). Everybody understands what it’s about immediately.’

In June 2020, some time after they had sat their final central examinations, the Abitur students were to come to the school to receive their results. The plan was for the year to be split into three groups – in order to guarantee enough space for social distancing according to COVID-19 regulations – and to be handed a sheet of paper which contained all their grades from their four Abitur exams, as well as their final GPA. Three days before the event, I had a Skype call with Jarek to find out how he was feeling about the date. Once again, the topic of involuntary visibility resurfaced as one of his primary concerns:

Interviewer: You will be given your final grades on Monday, won’t you? (‘Yes’). How is it for you to think about that?

Jarek: I can’t stand that at all (he laughs). That ... I’m really ... I’m already really nervous about that. Because ... I mean I can understand that friends and classmates want to kind of compare themselves. But I don’t like it. And ... for me it’s ... for me it’s actually relatively private data, when you think about it. It essentially doesn’t concern anyone but me (he draws in a deep breath). But I can already see how everyone will be throwing themselves at each other. ‘What do you have? What do you have?’ Well, no! I’m not really looking forward to Monday. I’d rather just ... quickly run in there ... get ... pick up the sheet of paper and run out again.

And sure enough, when I attended the event, I witnessed what Jarek had feared. The students were sitting in the auditorium, when each of them was

soberly called forward to collect their results slip from the teacher on stage. Jarek picked up his sheet of paper, the other students watching his every move. He did not look down at the document whilst walking back, his hands shaking again. From across the room, I could finally see him slowly lowering his eyes towards his grade and I tried to read his expression – but to no avail. After everyone had received their grades, the assembly broke up and the students started to compare results. Before long, there was a little crowd of classmates forming around Jarek, asking him about his GPA and craning their neck to see the number on his piece of paper. Though reluctantly, Jarek disclosed his result in a matter of seconds. This suggests, then, that his strategy to keep his grades to himself and to tell people to ‘mind their own business’ was easier said than done, which explains why the other students consistently knew how he performed. It is thinkable that Jarek did take some pleasure in showing his good grades, despite the due humility he enacted in the interview – however, on this particular occasion, his Abitur grades were much lower than expected. This suggests that even though Jarek would have had good reason to want to conceal his grades, he could not have easily done so.

Even though Jarek felt that his private achievements were being dragged into the light – for others to scrutinise and to compare themselves to – he also saw advantages in his grades putting him in the spotlight. Rather than laterally, with peers, this played out particularly in hierarchical visibility to teachers. When I asked Jarek where he believed his self-professed perfectionism stemmed from, he answered:

Maybe it's a social aspect as well that you think that you will get more recognition or that ... your teachers will appreciate you more if you have good grades. I'm thinking to myself ... I don't even know if that's true, but personally I always have this in the back of my mind. That keeps me going.

At first, it seemed as if Jarek purely utilised the promise of recognition as an incentive to invest into his school performance – voluntary visibility as an act of empowerment, so to speak. However, in later stages of our interviews, it became clear that Jarek often rather felt *compelled* to be seen by his teachers via good marks, but also by society more generally in order to achieve a certain social standing. With regards to the job market, he for example said:

One just has this feeling that there is an ever growing competitive pressure because there are more and more A-level holders (*Abiturienten*) around. And because so many achieve the Abitur, one especially has this pressure to get a 1 before the comma² in order to stand out from the others. And to then also have better chances on the job market. So ... particularly in this mass of high school graduates, I see this pressure from society.

Being noticeable was here an imperative for Jarek who strove for social recognition and success. It is the responsibility of the individual to be visible, outstanding in a sea of applicants, and grades, to Jarek grades were an important tool for achieving this. Constantly working on his profile as an applicant, Jarek enacted a contemporary form of subjectivisation which the German sociologist Ulrich Bröckling coined ‘the entrepreneurial self’ (2007). Each and every person in an age of pervasive economisation is called upon to engage in ‘intrapreneuring,’ that is understanding and marketing themselves as a trademark in order to stand their ground in the market (2007, p. 62 ff.). Under competitive conditions, the entrepreneurial self is placed under the pressure to be different (2007, p. 106), in other words to be visible against the backdrop of a throng of others. Uwe Vormbusch, also a German sociologist, has linked this kind of competition-driven self-optimisation to calculative practices in his work on human resource management. He argues that number use in that context is intended to combine objectivising external description with subjectivising self-description in order to trigger the feeling of responsibility for self-perfection in employees (2012, pp. 25–26). The material above shows that Jarek also walked this line between ‘power’ and ‘powerlessness’ (2012) in relation to his grades – at times using them to be seen, but also being forced into being of public interest.

The flip-side of self-enhancement, as Bröckling has noted, is the ‘constant fear, of not having done enough or not having done the right thing, as well as the perennial feeling of inadequacy [...]’ (Bröckling 2007, p. 74, own translation). Jarek attested to this too when he talked about the way in which his pressure to perform manifested itself physically. He told me that he often struggled with headaches, as well as insomnia, particularly before exams or long school days. He added:

Or that I also somehow have the feeling that I’m not doing (*leisten*) enough, or have to do more, more, more. But at the same time one cannot do more because one is already at the limit. It expresses itself pretty strongly.

Fear of failure was the undercurrent that flowed through all of my conversations with Jarek. He tried to do his best in order to prevent it, and in order to not lose the acknowledgement of his teachers. At the same time, Jarek sought to develop strategies that would hide his grades from the scrutiny of peers, lest he slipped up one day. This was all too understandable, for as a successful student, Jarek lived out his school life in the floodlight, and inevitably this would have thrown into relief his failure too.

Before I discuss the visibility of failure in more detail, it is worth noting that the visibility of success and the pressure of having to keep up one’s performance were not only relevant for older students such as Jarek. In year five, the prime position of the ‘best student’ was filled by Nayla, a Kurdish 11-year-old girl who had come to Germany from Syria four years ago. Nayla aspired

to become a doctor like one of her relatives and therefore put great efforts into her school work. Her German was astonishingly elaborate, she revised conscientiously and had superb grades. Like Jarek, Nayla seemed to be under significant pressure in relation to her school work, as she often talked about having trouble sleeping before exams, getting up in the middle of the night to revise, having frequent headaches and feeling 'very stressed' about school. Nayla's grades, like that of Jarek, were visible to her peers and of prime interest particularly to a few ambitious Syrian boys in her class whom she beat in every exam. The boys in question, Jamil, Baran, and Mehmet were obsessed with keeping track of Nayla's success in order to compare their own achievements to hers. Jamil in particular grew more and more frustrated; one time he stood opposite Nayla, pointed his finger at her and desperately said to me: 'Miss Rohde, why do I have to be in a class with *this striver* (*Streber*)?' Jamil told me that he had recently shown an exam of his to his father, only to be asked 'What did Nayla get?' In this case, the lateral visibility of Nayla's grades to peers even extended to their parents. On a different occasion, Baran and Mehmet asked me how to calculate a GPA from their grades. They wrote down their grades in each subject, I showed them how to derive the average from them and Baran's next question was: 'Can I give you Nayla's grades now?' before beginning to recite them by heart.

Failing in the limelight

As was already hinted at, quantification not only exposes success, but also failure and thus creates the failing individual. In year five, this role was occupied by several pupils – mostly boys – and one of them was Nasir. Nasir was a skinny 11 year old with large round brown eyes and long lashes, a fine, slightly elongated face and straight dark blonde hair. His family was from the Middle East but he was born in Germany, a fact that was often drawn upon by teachers when lamenting Nasir's mistakes in written German. In conversation with Nasir however, I found out that he exclusively spoke Arabic at home and struggled to switch languages, especially after the school holidays. I got to know Nasir as a quiet boy whose behaviour differed quite remarkably from that of the energetic crowd of Kurdish boys that he was friends with. He was often at the centre of the group's teasing even though the other boys always claimed with conviction that it was just friendly fun. The class teachers thought of Nasir as somewhat slow cognitively, whereas I was under the impression that he rather had a thoughtful nature about him. In the middle of chaos, he would often stand in front of me and solemnly ask questions such as 'What do *you* think about grades?' Given the teachers' low opinion of Nasir's intellectual abilities, I was surprised when I first saw his marks in the school database. He had several 2s, including in philosophy, natural sciences, and domestic science. However, in the so-called main subjects English, German, and mathematics, he had a 5, 4, and 3, respectively. It was these marks which set up and made Nasir visible as a

failing individual before his friends and the rest of the class, as the following scene illustrates.

It was a cold and bleak Tuesday morning at the end of November. I was sitting on the teachers' desk in the year five classroom and it was still so dark outside that the room was mirrored in the windows. Some of the pupils were already there – despite the hour, there was excited conversation and Milad and Jamil were wrestling in the back of the class, throwing over chairs as they did. As usual before class, a group of children had gathered at the front, beleaguering me as to who would be interviewed next. As Baran entered the classroom, he called 'Miss Rohde? Can you revise with me?' I was reminded that the weekly vocabulary test in English was set for today and I started to quiz Baran, as well as six others. Throughout the exercise, some of the boys were telling me about their own and others' grades. At some point, Jamil and Sebastian shouted into my right ear that Nasir – who was not there yet – had so far only ever written 5s. 'He only had 5s and one 2,' Jamil corrected himself. 'Yeah, he had a 5–. He was just missing two points for a 6,' Sebastian added passionately. 'He only had two things right.' All of the other children were now listening in and two girls who had arrived in the meantime had joined us, coats and backpacks still on. Nasir's grades seemed to be an open secret in the class and I was surprised at the level of detail that the children knew. I asked Jamil, who sat next to next to Nasir in class, 'How come you know all that?' He mimed twisting his neck to ogle an invisible desk on his left side, his eyes narrowed. Then he looked back at me, smiled cheekily and said: 'Because I'm always looking, like that.'

Again, it is the instant visual accessibility of grades that makes it almost impossible for pupils to shield them from their friends or classroom neighbours and consequently from the whole class. Given the clear ranking implied in the grading scale, the children did not need to engage in any interpretative work to grasp that a grade 5 implied failure on the part of Nasir. In many of the cases that I observed, the absence of the individual being talked about – as in the first vignette – was not a necessity.

It was late January and school had been going on for almost two weeks since the Christmas holidays. On this day, the children were to get back the English exam that they had written before the end of the previous calendar year. The first thing that Duha, from Syria, said to me when I met her sitting in front of the locked up classroom was: 'We get back English today.' When Mehmet later entered into the classroom, he forwent a 'Good Morning' and got straight to the point by saying 'If I don't get a 2, I'll lose it.' His younger brother Baran, who was in the same class, could not help but tell me that Mehmet had a 5 once 'but he never says so.' Mehmet shot him a dirty look and Baran giggled insecurely. Little by little, more pupils trickled in and many told me that they were worried about getting the exam back. Nasir had arrived too, and started unpacking his things onto his table. Mehmet yelled in my direction: 'Nasir's favourite grade is a 5. He always has a 5.' Nasir looked up and smiled faintly, obviously ashamed. While he was not looking, Mehmet grabbed a folder from

Nasir's desk and ran up to me. The folder contained all of the marked tests and exams that Nasir had written so far in English this school year, signed by his parents and teacher. Each of the students had to carry such a folder to class each day. Mehmet hectically flipped through the pages, pointing out every 5 he could find to me, making sure to skip the occasional 3 hastily. 'That's not nice, Mehmet, put it back,' I said but to no effect. Nasir had now noticed that his folder was missing and his eyes widened in shock as he realised what was going on. He darted up to the front, yanked the collection of his exams from Mehmet's hands and apparently hurled protests or insults at him in Arabic. Then he yelled in German: 'Look at your own tests first; you don't always have 1s either! And besides, I have a very good report. I can show it to you soon!' Baran interjected: 'Yes, *very good*, of course. Not good or satisfactory.' He turned to me and lifted his eyebrows.

Grading robs students such as Nasir of their privacy, and makes their performance in school a topic of public discussion. The failing individual, much like the successful individual is used as a marker for peers to compare themselves to and in this case notably to feel better about their own, sometimes only slightly, better performance. In a very similar event a few weeks later, Mehmet explicitly linked Nasir's grades to his now established role as an overall failing student: Mehmet was telling me about Nasir's grades again while the latter listened from afar and smiled whimsically. 'He has a 5 in English, 5 in German. He has everything bad.' Then he asked 'You need good grades, yes? To do Abitur?' I said that that's generally true and regretted it a second after when Mehmet shouted across the class: 'See, Nasir! You can't do Abitur. You're too bad!' I tried to explain that the grades in year five did not matter for the Abitur at all but my words were drowned in more shouting. Nasir laughed desperately and screamed: 'Hey, what do you want. I'm still little!' His voice cracked on the last word and he looked as if he was about to cry. When everything had gotten a little quieter again, I walked up to Nasir and said: 'I saw your report in the grading conference. It doesn't look bad at all, there are many good grades on there. There's even a 2, isn't there?' 'Yes, one,' Nasir said and laughed. I was surprised at myself that out of all things possible, I chose grades as a topic to make Nasir feel better about himself.

On all of the occasions described, Nasir's grades were read by the others as an irrefutable fact, something that he could not 'explain away' or make 'unseen.' Interestingly, Nasir tried to combat his visibility as a failing student with further visibility, by announcing that he would show the others his final, better, report even though Baran was clearly not willing to be convinced. Nasir's public role as a failing student had become an important reassurance for the others to console themselves in their own failures, and they were not willing to let him present a different image.

Just like it has been noted about testing, quantification, too at once defines and exposes failure remorselessly, thus depriving people of their power to self-represent. In '*Testing Testing*' (1994) Allan Hanson argues, by drawing on Goffman, that individuals usually portray a context-dependent, curated

image of themselves to others. In other words, they have privileged access to their self and can decide which aspects of it to highlight. However, as Hanson puts it, ‘if the artful presentation of Goffman’s self is seductive, what happens in testing is, to borrow a simile from Jean Baudrillard, pornographic’ (1994, p. 305). Hanson’s interpretation of testing as a pornographic display hinges on the notion of involuntary visibility. He stresses that

pornography differs from seduction in that the individual fixed by the pornographic gaze is powerless to conceal, control or nuance anything. She or he is displayed for the observer’s inspection, recreation, probing, and penetration in whatever way satisfies his or her purely selfish purposes (1994, pp. 305–6).

While the comparison may be somewhat drastic, it captures the essence of visibility through grades. Nasir, as the failing pupil was brought into the open in this way, being used by others as a point of reference, a representation of an extreme that helped them to put their own achievements into perspective. Both the fact that he could not easily hide his grades and that they were read as irrefutable truths, made it impossible for Nasir to escape the limelight and to portray an image of himself that he had chosen.

Lateral visibility of failure was not restricted to younger children. In fact, it becomes especially pronounced in the years leading up to the Abitur when students begin to drop out. In my time in the Q2, it happened three times that students did not return to class because they had reached their maximum number of deficits and were no longer allowed to sit the final examination. The empty chair in the classroom was the ultimate visualisation of failure – it was what remained after the person had already left.

I have so far focused on lateral visibility of failure towards peers as it is this emphasis which notably distinguishes grading from Foucauldian panopticism. However, hierarchical visibility is of course also a key effect of the school mark. The exhibition of students towards teachers via grading conferences will be discussed in the next section, therefore what remains to be mentioned here is the role of the parents. Up to the point where they become officially recognised adults at the age of 18, all pupils have to take home their graded exams and tests, in order to get them signed by their parents. They then have to return the document to the respective teacher who checks the signature in order to make sure that the parents stay informed of their child’s performance in school. As was already mentioned in [Chapter 2](#), some of the children professed to having forged signatures in the past, even though they all agreed that one could not ultimately hide one’s grades from parents – in the end, on the parent consulting day, everything would ‘come out.’ The school context is consequently one in which students simply cannot keep failure concealed from their families, and there were a great many occasions where pupils with bad grades were afraid to show them to their parents. In an interview, I asked Jamil what he would think if he ever got a 5: ‘Oh shit, I’m done.’ And what

about a 6?’ ‘Shit, I’m not going to sleep at home,’ he replied. Particularly when they received low grades, the pupils often tried to find ways around having to show them to their parents, but could never avoid it altogether. Valentin for example, a Russian-German with determined parents who perceived of all grades below a 2 as bad, often could not bring himself to get an examination paper signed if it did not measure up to their standards. After having been asked repeatedly to provide a particular signature and having failed to do so, his English teacher loudly scolded him while his classmates were working on a task. Valentin sat at his desk, staring ahead into space, his enlarged eyes behind the thick glasses beginning to fill with tears when the teacher said with an agitated voice:

You know that if you don’t show them the exam, your parents will be mad. And if I don’t get to see that signature then I get mad too. I just *don’t get* it how you can do something that will make everyone angry with you.

Valentin did not say a single word but handed in the signature a week later.

The unnoticed others

Naturally, not all school performance falls into the extremes of success or failure. In fact, a large group of students achieve ‘mediocre’ grades in most subjects. In an article on higher education audit practices, the anthropologist Marilyn Strathern asks the question: ‘What does visibility conceal?’ (2000b, p. 310). The same question must be asked of a grading regime. In my fieldwork, it became apparent that while the two outer ends of the performance spectrum as measured in grades – success and failure – are being cast into the light of publicity, mediocre results and the mediocre pupil which quantification creates, are best described as ‘hidden in plain sight.’

Several striking examples of this presented themselves to me in the so-called grade conferences. Twice a year, that is about two weeks before the half-term reports and final reports are issued respectively, teachers meet up to talk over some of the grades that they have given to their students. A whole afternoon is usually reserved for discussing all the different classes of a given year and the teachers leave and enter the room according to whether or not they taught in a given class, say in 5c but not in 5d. In an ethnographic essay on grade conferences in a German gymnasium, Kalthoff and Dittrich argue that the purpose of the event is the ratification and fixing of the teachers’ verdicts about their students (2016, p. 481). In a dramaturgical enactment, the teachers’ subjective evaluation is objectified and solidified so that it becomes a judgement by the school rather than by an individual member of the teaching staff (2016, pp. 180, 459, 481). Kalthoff and Dittrich also note the conspicuous physical absence of those being talked about – the pupils – from the event (2016, p. 480).

The grade conference for the Q2-Abitur students was an especially memorable experience in my fieldwork and provided many valuable insights into the theme of visibility through grades. The conference took place in the middle of January 2020, its purpose being to finalise the Abitur students' grades, to check if they were registered correctly in the database so that the reports could be printed and the algorithmic decision as to who would be admitted to the final examinations be made as the next step. The grading conferences for the secondary stage II (including that of the Q2) differ from those of the secondary stage I only insofar as more teachers are present. All of the teachers who deliver one or more subject in the Q2 take part, but they will have rarely taught all of the students who are being discussed. I describe the event in some detail below, as it contains many relevant aspects.

It was a grey afternoon, the school day was over and the Q2 teachers were making their way from the staff room to the venue for the grade conference. I joined the crowd, following the lead of a white extension cable which wound its way through the corridor and into an empty chemistry classroom where it connected to a computer and screen which looked obviously out of place. They had apparently been moved here just for the occasion. Little by little, the room filled with about 30 teachers who took their seats at the severely damaged red-tiled tables. Mrs Schröder sat next to me and the atmosphere in the room became continuously more relaxed, almost exuberant. There was animated chatter and laughter everywhere and I got the feeling that for the teachers, this conference was not the chore I expected it to be. The 'alpha males', a group of particularly confident and loud older male teachers had grouped together in the back of the class and I could not help but smile because I did not think that these teachers realised just how much they resembled their teenage students. The teachers in question reclined in their chairs, obviously at ease, bellies protruding, and goaded each other more and more with punchy remarks and raucous laughter. The German word *Stammtischstimmung* came to my mind, literally the mood amongst pub regulars. Mr Okermann, the Sixth Form coordinator, was standing at the front of the classroom, next to him was a whiteboard onto which the screen of the computer was being projected. The computer was controlled by Mr Bilke, the tall and restless biology teacher whose Abitur-class I was observing, and who had opened a PDF document in which each of the roughly one hundred pages was dedicated to an individual student. While we were waiting for Mr Okermann to open the conference, Mr Bilke was sitting on the very edge of his chair, bouncing rapidly on the balls of his feet in his trademark Adidas high-top trainers. As he scrolled back and forth through the document, intently peering almost through the screen, I could see that each of the pages had the same layout and I had time to sketch it quickly, replicated in [Figure 4.1](#).

At the top of each page was the name of the student. It was followed by three tables which clearly contained the grades in points in each subject over the past three half-terms of the qualification phase. A few weeks before the event, the teachers had been asked via email to enter their grades for the first Q2

Figure 4.1. Student overview for the grade conference

SURNAME; FIRST NAME

Q1.1	D	E	M	SP	BI	SW	GE	F	P	MU
	03	09	11	08	08	10	02	09	13	11

Hours Missed	
<i>Excused</i>	<i>Unexcused</i>
77	30

Q1.2	D	E	M	SP	BI	SW	GE	F	P	MU
	05	10	10	07	06	10	02	10	13	09

Q2.1	D	E	M	SP	BI	SW	GE	F	P	MU
	05	09	10	07	05	10	03	10	13	11

half-term (Q2.1) into the school's database. Deficits, that is marks below four points, were highlighted in yellow. Next to the tables were listed the hours of class that the student had missed in the half-term just gone, and how many of these were officially excused and how many were not. Below was a photo of each student, taken in front of a white rough cast wall.

Mr Okermann finally cut through the noise, asking teachers to check if their grades were correct, as Mr Bilke scrolled back to the first student. One by one, each of the pages – in alphabetical order of the students' surnames – was called up and left for a few seconds. Before long, a lively commenting game was in full swing among the teachers, Mr Okermann chipping in with his characteristically cynical nature every now and again too. The reactions were mostly relative to a given student's performance. When a pupil's profile contained many deficits highlighted in yellow, it usually only took a split second for a collective moan to be emitted by the crowd, followed by remarks such as 'Oh, him!' or 'That's a nitwit!' Mr Wegener earned a loud round of laughter when he at one point shouted: 'He told me he didn't have any deficits!' in response to a file with many yellow highlights. When the page of a girl with a particularly low record came up, a proper tumult broke loose. 'Can someone tell me why she's still here?' 'She must be as old as me by now,' some teachers said, referring to the fact that the student had repeated several school years in the qualification phase. 'I don't know what her problem is,' someone said and Mrs Schröder replied 'It's the cerebrum, I can tell you that.' An equally noticeable, although different reaction could be observed for those few students with unusually high grades. Someone shouted 'Overachiever!' (*Streber*) in response to the PDF page of a girl with high grades and a different teacher replied 'Well, we don't have many of those here.' For most of the high-achieving students, the atmosphere suddenly became solemn, and respectful

remarks were made: 'She is a *very* good student.' 'Yes, she is.' 'I didn't even know he had such beautiful grades.'

In stark contrast to these reactions were those towards 'mediocre' students. When the page of someone with average results was shown, there was usually no reaction at all. The teachers briefly scanned the page in silence with their eyes and unless anyone wanted to correct a false grade, the next page was scrolled to. Only rarely, features other than grades elicited remarks. After the first few students had been looked at, someone from the crowd stated the obvious by saying: 'Who on earth took those photos? They are a catastrophe.' Mr Bilke slowly raised his hand, grinning slightly and I got the feeling that his height might have had something to do with the unnaturally enlarged noses of those photographed, rendering them almost unrecognisable in some instances. Especially the female students' looks were a recurrent theme during the event and interestingly, they were often directly related to grades. A few pages further down, one of the pictures looked out of place among the previous ones. Thao, the Asian-looking girl in the picture had rather low grades and on the left of them, her face filled the picture completely. Her skin was flawless and she looked seductively down the camera lens. Mr Bilke was quick to point out that the girl had been the only one to refuse to have her picture taken and had instead sent in this one. 'There's the word "no", Martin,' someone stated. One of the female teachers remarked: 'I only saw her today and she has made herself massively prettier in that picture!' and one of the men in the back replied: 'What's reality, what's filter here?' Mrs Schröder whispered to me: 'It looks like a photo from a very dubious kind of catalogue.' In stark contrast to this was the reaction towards Maria's picture, a tomboyish-looking girl who ended up achieving one of the highest GPAs of the year. After her grades had been earnestly acknowledged, one of the teachers stated: 'What kind of a photo is that? She's a little prettier in reality.'

The Q2 grade conference, as well as others that I observed, was telling in many ways. Firstly, and perhaps to be expected, it became apparent that even in a grading conference, some students stood out for reasons other than their grades – after all, the individual is not completely congruent with the student. Looks, especially of the young women, were the most notable aspect to be mentioned, perhaps owing to the limited time available in the conference to engage in more nuanced discussions about other aspects of a student. What was intriguing to witness though was that even the students' looks were often linked *back* to the numbers on the screen. The failing student notably 'made herself prettier' than she allegedly was, whereas the successful student was viewed as 'prettier in reality' than in the photo. Secondly, the event illustrated that the students were for the purpose of the conference reduced largely to their numbers. Apart from the name, and the abbreviations of their subjects, no other textual information was included on the PDF file. Quantifying the students in this way made it possible for the teaching staff to 'discuss' 108 individuals in the space of less than two hours and to finalise their grades, but also paved the way for superficial commenting. Thirdly, because of the spontaneous visual accessibility of numbers, there was a complete visibility

of all students' performances to all the teachers present, even if they may not have known each of them personally. Remarks such as 'he told me he didn't have any deficits,' once again show that pupils cannot ultimately conceal their results, in this case from the hierarchical gaze of their teachers. The grading conference however fourthly and lastly revealed that it is largely success and failure, the two extremes of the grading scale, which are at the centre of interest and thus the collective commenting sport. Mediocrity, on the other hand, is rather hidden in plain sight: average students and their performance are visible to all in as much detail as others but their 'marked mediocrity' often fails to attract any attention. In other words, the mediocre student cannot actively hide from publicity, but may well be overlooked or forgotten about.

The philosophy teacher Mr Wegener, one of the most avid and sarcastic commentators in the conference, summed up this phenomenon in an interview when he talked about children who would be in need of individual assistance but do not get it because their grades are still too 'normal' to draw attention to the problem:

These children are what we call submarines. Well it's a little contemptuous ... we ... it's not really about the children ... submarines because they actually run beneath the surface and so on.

Mediocre grades and by extension the mediocre students that they create are then largely submerged in a grading regime which emphasises the flagships of success and the unrigged ships of failure.

Discussion – of floodlight and spotlights

The purpose of this chapter is not to make any claims about the absolute value of visibility. For some pupils, being seen can entail acknowledgement or praise, or being offered additional help. For others, their visibility as a particular kind of student can be a source of immense pressure or mockery. What is true of all students however is that their visibility is not a choice. Even those who may be overlooked because of their mediocre, unexciting grades, cannot choose to cover up their marks completely. Every student's grades are publicly displayed to teachers in the grade conferences or can be accessed at any time in the school's database, and fellow pupils often know 'who got what'. Grades are also routinely disclosed to parents, as minors have to take home their graded examinations to have them signed and at latest at the parent-consulting day, the children's performance is communicated to the home. What is more, hardly any job application after school will be possible without disclosing one's grades to the prospective employer, sometimes even after having completed higher education. Thus, although students may experience different *effects* of visibility, it is not in itself something that they have any control over.

Via grading, the successful, failing, and middle-of-the-road student is defined according to a six-point scale – either in relation to a given subject,

but often overall. The clarity of numbers makes it easy for others to either access or otherwise find out someone's marks with hardly any hermeneutical exercise being required to make sense of them. To look at a person's grades, as I did on the first day that I met Jarek, is to gain an instant and unadorned impression of the individual without having to engage in any contact with them. The person is detached from their performance and as such unable to conceal those results which they may be ashamed of or want to keep to themselves for other reasons. The school is thus a context in which its attendants live in constant visibility and which thereby robs them of some their power to self-represent, to explain, or to refute. As Strathern puts it, 'there is nothing innocent about making the invisible visible' (2000b, p. 309).

In his critical analysis of the 'information society', Tsoukas argues that the nature of knowledge has changed within it. From Aristotelian self-knowledge, which is 'context-dependent, personalized, time-bound, and infused with values' (1997, p. 839), it has turned into knowledge-as-information which in contrast is an 'objectified, decontextualized, time-less, impersonal and value-free representation [...] to be used instrumentally' (1997). The epistemic nature of grades will be discussed further in [Chapter 8](#), but for the present purpose it suffices to say that grades as a form of quantification are quintessentially information rather than knowledge; they purport to objectively represent an individual's performance from an outside perspective. A student's success, failure, or mediocrity becomes a fact, a datum which exists independently of the person themselves on a piece of paper or in a database. Tsoukas draws on the familiar historical metaphor of knowledge as light and argues that, in the age of information, this light might prove to be another tyranny. More information, rather than knowledge, has in his eyes led to less understanding and less trust (1997, p. 828). Steffen Mau, a German sociologist, applies Tsoukas' ideas to the current explosion of quantificational metrics. He argues that social life is subjected to a 'tyranny of light' (2019, p. 141): individuals are successively denuded through the collection of ever more private data, and notably also without their consent ([Mau and Vormbusch 2018](#)). Even though grading predates the information society, as well as Mau's 'metric society', by many centuries, the constant and involuntary visibility of students through grades may in itself be understood as a tyranny of light. Even where pupils manage to subvert the instant readability of grades by concealing the big red number on their exam paper from prying eyes, it is almost impossible to give a vague answer to the question 'What did you get?' Refusal to say anything at all is usually just as telling. If hiding from their classmates' scrutiny is difficult, obscuring their grades from parents and teachers is downright impossible for all students. The intimate nature of personal success, failure and everything in between is met with a framework of incessant exposition. While the successful and failing student live out their school year in the floodlight, the average student can never be sure when the spotlight will temporarily fall on them.

Hannah Arendt, in one of her rare essays on education, criticises the US-American education system for imposing on children a daily life spent mainly among peers in educational institutions. She argues, using the same metaphor as Tsoukas and Mau, that among these children, a public forms which is detrimental to their development as it creates a life-hostile light. As she puts it:

Everything that lives, not vegetative life alone, emerges from darkness and, however strong its natural tendency to thrust itself into the light, it nevertheless needs the security of darkness to grow at all' (1954, p. 8).

Where children are forced to expose themselves to the light of a public, it is only their person and work that counts, rather than life itself (1954), Arendt states, 'The merciless glare of the public realm' drags the private life into the light and thus destroys the 'secure place, without which no living thing can thrive' (1954).

Apart from the fact that grading is inextricably intertwined with the school as a public institution in itself, the involuntary visibility that marks entail, further perpetuates the 'tyranny of light' before which students cannot choose to hide an integral part of their lives. In addition to the public among peers which Arendt describes, quantification in grading establishes visibility also towards parents – that is in the usually private realm of the family – and towards a larger public, that is the teachers and the consumers of grades on the job market. Grading is thus a technology of light which combines Arendt's lateral visibility with Foucault's hierarchical observation and brings into the light information, rather than knowledge, about an individual to peers, parents, teachers, and employers.

In this chapter, I have analysed a facet of what it means to be quantified through grades. I have discussed how school marks administer visibilities by both creating and putting into view – or hiding – different categories of students. Visibility is crucially a question of how a person is being perceived by others, that is from an outside perspective. In [Chapter 5](#), I turn my attention to the inside perspective and ask how students view themselves through their grades.

Notes

¹ 'Deficit' is the formal term for grades below four points, that is a mark of 4–, during the Abitur phase. Generally, seven deficits are allowed in order to pass the Abitur.

² The Abitur GPA ranges from 1,0, the highest possible grade, to 4,0, the lowest.

5. *'It's understandable if it destroys you, right?'* Students' graded identities

The 'meeting room' was an oddly shaped little space which looked as if it had been squeezed in between a biology classroom and a staircase.¹ The room was filled almost entirely with an octagonal table, surrounded by eight chairs. A flipchart and a ventilator stood in the corner, and the blinds had fallen off onto the window sill. A crate with small glass bottles of sparkling water, as well as a few unopened bags of biscuits were the only signs of the room's original use: this was where trainee teachers received the grades and verdict for their final lesson inspection by the board of external assessors. The young and flustered examinees would usually spend the morning before the examination preparing the room to make sure that the judges were well catered for.

Whenever I could, I co-opted this room for my interviews with the Q2 students. While I waited for my interlocutor to arrive, I noticed the familiar smell of the linoleum floor which many people who went to school in Germany will remember. In one of the windows of the primary school opposite, I could see three little girls practicing their wooden flutes.

Somewhat to my surprise, Enes turned up punctually to the minute. I had been taken aback that he had signed the consent sheet to be interviewed at all and had even been the first to get in contact via email to schedule a time for the interview. Enes was Turkish-born, 20 years old, tall and with a broad, somewhat overweight build; he had short black hair and a matching beard. That day, he was wearing khaki Cargo trousers with sewn-on pockets, a dark green hoodie and grey trainers with those foamy masses of plastic for soles which were fashionable at the time. Overall, Enes looked too old to still be in school, and at first sight he appeared slightly threatening – an impression that was however quickly dispelled by his kind face. 'Hello,' Enes said as he walked in. I greeted him and asked him to sit down opposite me at the table. Before long, we started chatting about his school biography. Enes talked about trouble concentrating in primary school, later going to the Hauptschule, then switching to the comprehensive for his envisaged Abitur and finally having to repeat the Q1 last year. Thanks to the database, I already knew that Enes still had very low grades, even though he did not quite tell me so². I also asked him about his favourite ever teacher – he named his former music teacher who had thought that Enes was a choir talent even though he had never joined because it 'wasn't for him'. As his least favourite teacher, he cited a woman who, as he said 'told me relatively often that nothing would become of me and that I couldn't speak German.'

After some time, I asked what was to become one of my classic questions: ‘What do you think grades measure? What do they refer to?’ Enes grinned and rubbed his face with his hands, he sighed and then said earnestly,

Well firstly there’s the oral and the written ... the oral is, I suppose, made better through sympathy points (*Sympathiepunkte*). But also through your own performance. How you behave in school, how you behave with the teacher.

He broke off. I went a step further by saying: ‘Sometimes you hear people say that grades correlate with intelligence. (‘I see!’, Enes interjected) What do you think of that?’ Within a heartbeat, Enes answered: ‘I don’t think so. It’s more that the grades correspond to ... studiousness. I would say that good grades are the result of a student who shows a lot of studiousness.’ I dropped the subject and after a while talking about related issues, I tried a thought experiment with Enes. ‘Imagine a pupil who continuously has low grades, let’s say in the area of 4s, 5s and 6s. Do you think that does something to the student?’ Enes hesitated but then said:

I think the person who gets very bad grades, or rather only gets bad grades ... would ask themselves the question if that person was stupid or not, I assume. And whether ... it makes sense to still go to school if you already get bad grades anyway.

Numbers as a source of identity

That marks can have an effect on students’ self-images, even beyond school, is a well-represented point in academic literature on education. Jörg Ziegenspeck, for instance, states in his extensive treatise on grades and reports in Germany, that the broad-brush distinction between ‘good’ and ‘bad’ pupils is a ‘global valuation which can hardly be taken by the student and their parents as restricted to the concrete and bounded school and learning setting. Rather, performance judgements are taken “personally”’ (Ziegenspeck 1999, p. 31, own translation. See also Quenzel and Hurrelmann 2010 for a more current reiteration of this). The philosopher of education Robert Paul Wolff argued as early as 1969 in an essay on grading in the US that ‘the American student lives, breathes, grows and defines himself in a world of grades’ (1969, p. 459). That grades can influence how students view themselves as a person is also a premise of some of the most well-known classic studies of school cultures, including *Reproduction in Education, Society and Culture* (1990) by Bourdieu and Passeron and *Learning to Labour* (1977) by Paul Willis. Explicit attacks of grading by scholars and public intellectuals alike also frequently reiterate the point (see for example Bower and Thomas 2013; Illich 1973; Kohn 2013; Monbiot 2022; Schinske and Tanner 2014). Some quantitative work exists as

well, for example illustrating an impact of marks on self-esteem (Klapp 2015; Owens 1994). Even though ethnographies focussing specifically on grades are rare, ethnographies of school constitute a lively genre. Some of the works in this tradition at least touch on grades and lend further support to the relevance of marks for students' identities (Bittencourt 2021; Everhart 1983). One of the few qualitative studies to foreground student perspectives on grades is Becker's et al.'s work (1968) on US college students and the 'GPA perspective'. The central argument is that where marks are the primary means of acknowledgement, students necessarily prioritise the GPA over other things in their lives. Grades hence 'come to be a measure of personal worth, both to others and to one's self' (1968, p. 55). Rabow et al. (1998) continued work on the GPA perspective and argue that it does not originate in the students' time at university but instead has its roots in early school experience.

The identity-defining power of grades is also alluded to within anthropology. In an aside to her work on indicators and quantification, Engle Merry mentions that 'in some of the most successful examples of responsabilization, such as grades in school, the indicator comes to shape subjectivity, defining for the individual his or her degree of merit' (2016, p. 33). Scholars have also pointed to the fact that this effect is not limited to the Global North. For instance, Kawanishi notes on the Japanese standardised rank score for pupils – the Hensachi – that '[it] painfully suggests to many students that they are inferior to others. Its impact on them and on their attitude to life is so strong that it often lingers throughout their lifetime' (2009, p. 79).

The impact of quantification generally – rather than grades – on individuals' self-image is to date not well-understood, as it is not an explicit research focus in quantification studies broadly construed. A notable exception is an article by Charles Stafford, detailing ethnographically how a Taiwanese tradeswoman uses numbers to portray a certain image of herself (2009). An area of scholarly research which lends further robust, if indirect, support to the identity-defining power of numbers is that dedicated to practices of self-tracking. The term refers to the 'monitoring, measuring, and recording [of] elements of one's body and life' (Lupton 2016, p. 1), usually with the help of digital devices such as smartphone apps or wearable sensors. The vast majority of trackable parameters, such as daily steps, productivity, calorie intake, and so on, are displayed to the user in quantified form, for example as levels, scores, counts or percentages (Lupton 2013, p. 394, 2016, p. 16; Schüll 2016, p. 5). While there exists a variety of reasons why people engage in self-tracking (see Berman and Hirschman 2018, p. 257; Mennicken and Espeland 2019), by far the most commonly cited motivation is gaining knowledge about oneself. The slogan 'Know Yourself. Live Better' with which the Jawbone Up Sensor was marketed (Crawford, Lingel, and Karppi 2015, p. 487), epitomises this. Similarly, the Quantified Self movement, a worldwide network of particularly avid self-trackers, operates under the motto 'self-knowledge through numbers' (Quantified Self Website 2022). Ethnographic work on self-tracking shows that hitting a quantified goal can elicit powerful feelings of accomplishment

and personal worth (see for example [Lupton 2017](#); [Pink et al. 2017](#); [Pink and Fors 2017](#)). On the other hand, especially patients with multiple chronic conditions frequently avoid (medical) self-tracking because their ‘bad’ numbers can mean that ‘you get reminded you’re a sick person’ as one informant put it ([Ancker et al. 2015](#), p. 1). A powerful example of the potential of numbers to figure centrally in one’s sense of identity is a poem by former Quantified Self member Alexandra [Carmichael \(2010\)](#) quoted in [Lupton 2016](#), p. 80), in which she explains why she stopped tracking:

Each day my self worth was tied to the data. One pound heavier this morning? You’re fat. 2g too much fat ingested? You’re out of control. Skipped a day of running? You’re lazy. Didn’t help 10 people today? You’re selfish. It felt like being back in school. Less than 100% on an exam? You’re dumb.

The existing work on self-tracking hence indicates that for those logging and analysing aspects of their life, numbers promise to offer deeper insights into who, or how, they are.

To recapitulate, research by education scholars from different traditions strongly suggests that grades can significantly shape the way students perceive themselves. Ethnographic engagement with the phenomenon is rare, however, and as a result, the specific mechanisms of identity formation through grades remain largely in the dark. Much of the existing literature creates the impression that students simply adopt an image of themselves which corresponds to their marks – perhaps along the lines of ‘good’, ‘bad’, or ‘mediocre’. This model of passive identification was not supported by my fieldwork – particularly for low-performing students there is too much at stake to straightforwardly accept the implications of the marks. Most importantly, none of the existing studies consider grades as a technology of quantification and query the significance of their numerical nature. As will become clear, the way in which students think about and engage with grades is very much shaped by the fact that the latter present themselves to the pupils as numbers.

Graded intelligence

A consistent finding during my fieldwork was that many students stated, contrary to the widespread hypothesis in the scholarly literature, that grades did *not* influence how they saw themselves as a person. When I asked 18-year-old Leila, what she thought grades reflected, she replied ‘just my school performance in the subjects. Not what kind of a person I am, but just my school performance. They don’t say anything about my character, but just ... well school.’ In response to the question whether grades shaped the way he viewed himself, Malte (18) answered similarly: ‘Not as a human ... because for me that doesn’t have much to do with school. But as a student, yes, of course.’ The 11-year-old

Jamil asserted: 'Grades don't mean how good you are. I think grades only mean if you revised or not.' Final year student Teresa (18) lamented about her school experience that 'everything is judged in grades. I'm not a grade ... you know?' Based solely on the official convictions uttered in the interviews, it appeared as though students at best interpreted grades as a reflection of their school-related behaviour, but never as a testament to their overall character.

However, my ethnographic work also revealed a striking discrepancy between assertions in interviews, and more heedless remarks as well as comportment during school life. One example of this divergence, in my interview with Enes, was described in the introductory vignette. Another instance when grades were read as a reflection of who one was, was when Maria, the valedictorian from the final Q2 year argued that she wanted to get a good Abitur result in order to boost her confidence later on in life. As she put it: '[...] later one can maybe look back at the Abitur and say "Oh, I had these good grades once", when you're not feeling well. And "I can do it again. I can reach this standard again."' In other words, the reports here served as a reminder of who one could be.

A particularly intriguing source of insight was a thought experiment which I conducted in the interviews. I asked students to imagine a different pupil who had so far only received very low grades in their school career. I then posed the question whether and in what way this would affect the student. As the people whose answers I have reproduced below all dealt with low grades on an almost weekly basis, it is reasonable to assume that their answers were shaped by their own experiences.

Sad. He wouldn't show the whole world when he would get something like that but yes, he would just feel really sad. He would think about himself 'I am *bad*. And ... yes I am *bad*. (Dennis, 11)

[He would think] I'm fucked. I'm fucked! (Jamil, 11)

Well, if he's not completely stupid then he would be ashamed of himself. (Daniel, 14)

I would even, I think, believe that he thinks about himself that he is ... useless, I'd say. Because I too have ... I ... know a few of those people. (Alex, 15)

I think he would become very self-critical. Would, let's say, look in the mirror more often and think: 'What kind of a person is standing in front of me? Somehow, I don't recognise myself in him.' Because he wouldn't live up to his own expectations. (Ilja, 18)

The replies suggest that grades shape students' self-perception far more deeply than their assertions in the interviews would make it appear. Rather than being strictly limited to school-behaviour, grades here appear as an indication of

personality ('I am bad') and general worth ('he is useless'). High-performing students interestingly expressed very similar views.

[One would think that] one has failed. I mean that one is, on a social level, just not worth anything. And then also with this big fear of social decline, that one won't find a good job later or that one cannot keep up one's living standard. I do think that it would be a very severe issue. (Jarek, 18)

When grades signal to you that you know ... that you are bad, then one also feels bad. And at some point, we also had this in economics, if ... if a person does not find a job afterwards, they feel worthless. (Jonas, 14)

A particularly strong connection between grades and self-perception was to be observed with regards to the notion of intelligence. The great majority of my interlocutors linked school marks with intelligence, in one way or another. Some students, such as Nayla, the year five star student, expressed the view directly in our interviews. When I asked Nayla if she thought one's grades were related to one's intelligence, she replied:

Yes, well ... it does have something do to with being smart. If you, for example, always write 1s or 2s, then it is just true that you must be smart. But if someone, for example, only writes 5s or 6s, then you can also say that they are not so smart.

In response to the same question, the 18-year-old Julia stated that in school 'you grade how clever the person is'. Enes was one of the students who explicitly denied that intelligence was related to one's grades, but nevertheless later mused that someone with consistently low grades (like himself) would inevitably wonder if he was 'stupid'. The close perceived connection between grades and intelligence was also borne out in responses to the above-mentioned thought experiment.

One will think ... he will always think that he is ... stupid. That he cannot do anything. That he just doesn't accomplish anything. That he is a failure. And ... (Pause). Yes. (Valentin, 11)

I think that that would change something about the self-image. Because, in today's system you're being told that grades reveal everything. How smart you are in maths, how good you are in English and so on. But it's not that which counts in life. Good grades, I think ... you shouldn't let this destroy you. But it's understandable if it destroys you, right? You know, that you lose a little confidence. (Sonia, 18)

I believe that the child wouldn't get such good self-confidence and would just think that one is stupid and can't do anything. (Julia, 18)

Again, the view extended to high-performing students like Natasha (14), who stated:

I would say that the word 'intelligent' would for this person really be thought in a bad area. That she would think that one is not really ... that the person is not really intelligent. She would think of herself: 'Well, I can't do anything. I am not competent enough. I will not accomplish anything in my life.'

That grades could be a straightforward indicator of a student's intelligence is strongly contested by educational research. A myriad of factors, which are unrelated to cognitive capacities, have been shown to influence which grade is issued. For instance, teachers' grading styles and prejudices, but also students' socio-economic background and parental ambitions play significant roles (Ingenkamp 1976; Maaz et al. 2011; Oelkers 2002). Even pupils' first names (Bonefeld and Dickhäuser 2018), handwriting (Hauschild 2014), and looks (Bull and Stevens 1979) can be relevant. And yet, many of my interlocutors treated grades not so much as appraisal or feedback by their teachers but rather as objective measurement. In other words, they assumed an indicator-feature relationship between grades and intelligence. One of the most consistent findings in quantification studies since the days of Porter's seminal *Trust in Numbers* (1995) is that numbers are closely associated with the notions of objectivity, rationality, and ultimately truth. Several students were in fact convinced that grades were much superior to written evaluation for gauging 'how one is'. Eleven-year-old Nelly argued that 'if you don't get grades then you don't know how good you are and when you get grades you can evaluate yourself better.' Her classmate Angelika stated: 'The text can't really explain if you've done it really well or badly. But the grades ... show ... really show it.'

Beyond suggesting to students the presence of measurement, grades had additional effects on how they viewed intelligence. Grading entails subjecting all students to the same metric – the marking scale – and thereby orienting these different entities along a shared scale. One of the repercussions of this perceived commensuration was that intelligence appeared as a single, clearly delineated feature, such as height, rather than as a multifaceted phenomenon, like, say, creativity. When I asked 11-year-old Dennis if he could imagine that everyone was equally clever in their own way, he replied as if he thought me insane: 'No. Doesn't work. No. I think. No! Never in a million years!' When I asked students who they thought the smartest kids in their class were, they usually named those with the top marks. The idea that different types of intelligence could exist – a theory which is seriously discussed in the scholarly discourse (see for example Aspara, Wittkowski, and Luo 2018; Gardner 2006; Mayer, Salovey, and Caruso 2008) – was hardly ever referenced. A notable exception was Maria, who stated that 'you can be intelligent on different levels than on a grade level [...] socially, for instance, that you can deal well with others.' Also Enes departed slightly from the predominant view when

he said that a friend of his brother had served as a deterring example for him because he had been 'very stupid in school terms'. Apart from these rare exceptions, students usually interpreted intelligence as that which is 'measured' by grades – a single feature, picked out by a metric like temperature in degrees Celsius.

Closely connected to the singular entity view of intelligence was the widespread belief that the feature behaved in a linear fashion – a belief which, in turn, fostered comparison among students. My interlocutors often talked about intelligence as if it were a matter of more or less, as if there existed a 'smart-to-stupid spectrum' upon which each person occupied a definite locus. This transformation of individual difference into magnitude is a classic effect of commensuration and allows for entities – in this case students – to be placed in a competitive relation with one another. For instance, when Enes heard about a classmate's grade in a recent exam, he exclaimed: 'Wow, you're even worse than I am.' Eleven-year-old Milad shouted, when I aided a high-performing classmate of his with a task: 'Don't help him, he's smart. Help me!' One of the widely recognised best students in the final year, Jarek, summarised the issue succinctly, when he talked about the pressure he felt about the fact that fellow students sought to compare themselves to him.

I noticed that immediately when we got an exam back ... they turned towards me and asked me what grade I had. [...] They wanted to know: 'Good, OK [...] does Jarek have a 1? Then I'm worse with a three. Or does he maybe have a 2, then maybe I'm just as good as he is' [...] It's really about symbolism, about giving yourself a higher value in the classroom, so to speak.

Students were not the only ones to draw on grades in order to ascertain their relative 'cleverness' or 'being good'; the phenomenon also extended to parents. During a thought experiment, when he was asked to explain how he would react to a 2 in an exam, Jamil stated:

With a 2, I'd be happy ... would show it to my parents. And my parents would ask me: 'What grade does Mehmet have?' When Mehmet has a 6, they'll say 'Well done.' And she [Jamil's mother] says like: 'Who wrote the best grade in class?' And as *always* it has to be Nayla! When I say it's Nayla ... she [his mother] says 'Get better. Do a 1 yourself!'

Leila worried that both her parents and her teachers could think of her as stupid because of her low grades. She also explained that it was painful for her to hear her parents' responses to low grades: 'For example, "This can't be, you can't always be mediocre"'. The term 'mediocre' in itself implies that this is not an absolute judgement but rather one which is based upon comparison.

In the context of my research, then, students routinely drew on grades as a reliable source of information about themselves, especially with regards to intelligence. My fieldwork, however, also showed that especially those students who have the most to lose by handing over their self-image to their marks do not simply surrender to their results. In the following, I detail the four most common strategies which low-performing students drew upon to negotiate and protect their identity. I observed any of these strategies in many different pupils but, for the sake of clarity, I will here mainly concentrate on the case of one particular student, Milad, who strikingly exhibited all of them. I also discuss why the quantificational nature of grades makes the latter difficult for students to contest, despite the resourceful application of countermeasures.

Negotiations of self in a marked world

Eleven-year-old Milad had been born in Germany and was the second eldest of four boys. With his parents, who had migrated from Afghanistan and who were then both unemployed, he lived in close proximity to the school, in the little reputable area of town, locally associated with poverty, crime, and 'migrants'. Milad was skinny, had short dark-brown hair, hazel eyes and fine features. Lively, and with a propensity of silliness, he was soon taken in by a group of Syrian boys in his class, together with whom he often got into physical fights during the breaks. Milad's school grades were quite low – a 4 in almost every subject – a fact which the other boys teased him with on a regular basis. Statements along the lines of 'You're so dumb' or 'Can't you think?' were frequent, as were ironic comments such as 'Wow, Sherlock Holmes' or 'You genius' when Milad said something correct in class.

Despite the official reminders of his education 'failure' in the form of school grades and the daily mocking of his allegedly low intelligence by his friends, Milad did not seem to simply adopt the image painted of him. Rather, he drew on a range of strategies, all of which had as their aim to maintain at least a somewhat positive self-image. The first strategy Milad employed was to stress achievement outside of school. On a hot summer's day in the middle of a peculiar type of schooling shaped by governmental decisions around COVID-19, I was sitting in a classroom with half of the year five class which had been split up. Each of us tethered to their desk with at least 1.5 metres distance in between, the children were shouting across the room to communicate with one another and myself before the arrival of the teacher. Jamil began to tell me about his successes in mathematics. As his story about a maths competition unfolded, I noticed Milad starting to fidget at his desk in the corner. Suddenly, he yelled across Jamil's talk: 'Yes, shut the fuck up now!' He continued shouting over him: 'We had clubs in primary school, we had clubs and I was in the football club!'

Milad here drew on football as something he succeeded at in order to stress that he too had achieved something. Sensing perhaps that he could not compete with Jamil's widely acknowledged cleverness, Milad emphasised a

quality which both was distinctly located outside of the school context and also unmistakably physical as opposed to cerebral. In the interviews, this strategy of stressing alternative kinds of achievement was employed by students of all ages. Pupils often told me that ‘school isn’t everything’ and talked about a range of other things that they were good or successful at. The list of cited examples ranged from dancing to gaming, from drawing to having a girlfriend.

Numbers not only serve to represent value, for example in the case of prices, but can also create it in the first place. The very fact that quantification is applied to a phenomenon or entity often indicates that it is of some importance (Adams 2016; Stafford 2009). In other words, what is counted, counts – at the risk of excluding the unquantified or unquantifiable (for further discussion, see the literature on the McNamara fallacy, for example Cook 2019; Hendrick 2015; O’Mahony 2017). Highlighting achievement outside of school allows students to assert an individual conception of value, and to uphold a positive self-image beyond the predominant metric of the school grade. Nevertheless, it has to be acknowledged that the students’ leeway in defending alternative ways of valuing is restricted in the epistemic context they navigate. Grades not only take centre stage because they purport to represent one of the key values of meritocratic societies, performance (Waldow 2011, p. 485), but also because they do so in quantified form. As Engle Merry notes, ‘the indicators that make the greatest impact are ones with strong institutional support and funding, a coherent and attractive narrative, and a composite indicator that allows for ranking’ (2016, p. 211). Faced with a metric as simple and institutionalised as the grade, it is difficult indeed for low-performing students to maintain an overall positive image of themselves, even if they underline other ways in which they excel.

The second strategy I witnessed was explaining ‘bad’ grades away. Most of the students with low marks tended not so much to question the accuracy of the latter, but rather created a range of explanations for them. By far the most common reasons for low grades were, ‘I am lazy’, ‘I have no motivation’, ‘I didn’t revise’, or ‘I’m no good at this subject/topic.’ Some of the older students, like Enes, also mentioned likeability, and argued that a particular teacher disliked their personality or behaviour, such as chatting in class. When I asked Milad about his recommendation for secondary school, he told me that he had wanted to go to the Gymnasium. He added: ‘But doesn’t matter. Because Gymnasium was too far, because I live here ... like two minutes from here.’ In truth, the fact that Milad attended a comprehensive school would most likely not have been a result of geographical considerations but rather of his low grades in primary school – whatever the reasons might have been for these. Students not only explained away their own ‘failures’ but sometimes also the ‘successes’ of others. Jamil, in particular, was often in the grip of a hot envy of other pupils’ good grades. For example, he told me that one of his classmates received better grades than him ‘only because she’s German’, and mused about a different girl that ‘she gives money to get good grades.’

High-achieving students themselves would also sometimes, though rarely, explain away their achievements. Jarek, for instance, argued that his stellar marks were to some degree the result of luck, in what might have been an enactment of due humility and perhaps safeguarding against other people's gleefulness if he were to fail one day. In her work on indicators, Engle Merry underscores that 'counting things requires making them comparable, which means that they are inevitably stripped of their context, history, and meaning' (2016, p. 1). Espeland and Sauder argue along the same line in their study of law school rankings that 'quantification can be understood as a systematic stripping away of author, protagonist, scene, and other core components of narrative [...]' (2016, p. 37). They note about their informants, law school deans, that 'people find it difficult to let the numbers speak for themselves and almost invariably create narratives to explain or explain away the numbers' (2016). Explaining bad grades away is often an attempt to reintroduce narrative, allowing students to affirm a positive self-image by reframing the situation. Many pupils used this strategy to interpret their grades as a product of their behaviour (for example not having revised), rather than resulting directly from the seemingly fixed and innate feature of intelligence. To endorse the belief that one is 'stupid' would arguably amount to self-abandonment and quite likely, as Enes thought, in the loss of hope for any future (educational) success. Continuously low grades come perilously close to telling students that they are 'stupid', and explaining them away was therefore a common attempt of defusing. Nevertheless, also this tactic has its limits. As Heintz writes, 'while language always provides a Yes- and No-Version and thereby a sentence already carries its negation within it, a negation in the case of numbers needs to be actively produced' (2007, p. 78, own translation). Bläser adds, 'this means that the simple assertion of the falsity of numbers cannot be carried out without some effort' (2017, p. 77, own translation). It is therefore not sufficient to simply assert the inaccuracy of a grade – and students tended not to do so – but a more complex process of reframing and retelling is required to protect one's self-image. In a context which issues struggling students with 100 to 120 reminders of 'failure' per year, this is an extraordinarily demanding task, which usually does not succeed fully.

Another common strategy employed by students to defend a positive sense of identity served as a complement to explaining away 'bad' grades: high-lighting 'good' grades, however few. In the case of Milad, this was a single 1 which he had received in engineering, mainly for doing very well in the task of building a pocket light. Whenever some of the children made fun of Milad's low grades, he would yell 'And what did I get in engineering?!' At one point, Jamil came to me during a break to boast about his philosophy grade. He had received the only 1 in the class, an astonishing feat according to his teacher Mr Wegener. Jamil stood in front of me, gesticulating expressively as always and said loudly: 'Miss, I'm telling you, I'm the philosophyBOMB.' I laughed and said 'Are you?' 'Yes, I'm the philosophyBABA,' he continued. 'I'm the FATHER of philosophy!' While I was still laughing at Jamil's imaginative

neologisms, Milad came running. He stopped short next to us and shouted with an expression of utmost sobriety: 'I'm the father of engineering! I have a 1 in engineering!' Later in the year, I had the opportunity to observe Milad in an engineering class. I could not quite believe what I saw for there could not have been a more extraordinary contrast to Milad's usual behaviour. He sat almost comically upright, and when the teacher started a short video clip, he asked permission to move his seat in order to see the screen better, in the politest way imaginable. Milad raised his hand for every single question and when he got an answer right, he turned around to his friends to say 'I'm the smarty (*Schlaumeier*) here.' When he once said something wrong, he muttered under his breath 'That was wrong but I'm still the smarty.' After class, Milad went up to his teacher and said: 'Misses Hertel, who was the best in engineering last term? How was I in engineering?' Mrs Hertel jokingly replied: 'You were awful!' They both laughed warmly and Milad asked again: 'But who was the best?' 'The best student is the one who knows least to begin with and most in the end.' 'That was me,' Milad settled the question with a heart-rending smile on his face.

Charles Stafford has convincingly argued that when anthropologists discuss quantification, they often present it as 'the hand-maiden of objectification, bureaucratisation, scientism and control' (2009, p. 123). While, both empirically and historically speaking, there is indeed often good reason to do so, it is true that such a one-sided approach can lead to an impoverished understanding of quantification. Based on ethnographic work in Taiwan and China, Stafford argues that quantification does not inevitably 'reduce people to numbers' (2009, p. 1), but that the latter can also be drawn upon to create and sustain a certain identity. When they highlighted their good grades, students too 'narrate[d] the self numerically' (2009, p. 108). As Espeland and Sauder have shown for law schools whose alleged quality is quantified in rankings 'it becomes much harder to make status claims not supported by rankings, or to sustain identities that are not linked to rankings' (2007, p. 20). Vormbusch argues similarly for calculative practices in human resource management that they no longer 'allow actors to legitimately communicate descriptions of the field and their own actions outside of the frame for description and action created by the numbers' (2012, p. 222, own translation). My research participants navigated a context in which, much like for ranked law schools or contemporary employees, a central part of their lives is represented by means of quantification. Having high grades is without a doubt the most potent way of convincing oneself that one is, or can be, a good student after all. For Milad, all of his efforts in this direction concentrated on the single perfect grade in engineering, and he was not the only one to make use of this strategy of accentuation. In the interviews, all of my interlocutors could name their best ever grade off the top of their head, when prompted. Sometimes this particular mark even dated back as far as primary school, but the students were nevertheless able to relate in detail what, for instance, the topic of the examination had been. In an environment where one's self-image as a student is almost

exclusively mediated by grades, it is crucial for pupils to continuously remind themselves of those particular marks which support their desired sense of identity – even if they are outnumbered.

The last strategy of negotiating one's self-image in the face of grades to be discussed here is downright self-deception. Its essence was captured in an intriguing interaction which I had with Milad. I was sitting next to him in an English lesson during which the children were to write their weekly vocabulary test. Milad had so far only received quite disappointing results, but on that day he was confident that it would be 'a 1 or a 2' because he had known a few of the words that I had asked him before class. I was slightly less optimistic. Mrs Sievers, the English teacher, distributed the test sheets face down and I also received one to keep me occupied. Shortly before the test started, Milad asked me: 'What is *sauber* in English again?' 'Clean,' I replied. 'And *schmutzig*?' 'Dirty.' He wrote both words on his left palm. The children were finally allowed to turn the sheets around and started writing. Milad was constantly talking to himself under his breath and was hitting his forehead with his fist. On the other side of him, Sebastian was muttering 'Shit, shit, shit,' while Nelly was moving her lips soundlessly and staring into space. After Mrs Sievers had collected the filled-in test sheets, she revealed the answers and Milad's previous confidence was dwindling rapidly as he was counting his mistakes. 'I had five mistakes,' he told Nayla and Nelly, even though in truth there were many more. 'That's maybe going to be a 2.'

During the following class, the lesson topic was reading an analogue clock, which Milad had already mastered. Instead of listening, he swiftly seized the still blank vocabulary test sheet lying before me and said 'I'll do this one'. He filled in as many words as he could, of course also remembering the answers Mrs Sievers had just revealed in class. For several other words, he asked me and wrote them down as I spelled them. Then, to my surprise, he handed the test back to me and said: 'Can you correct this for me?' I agreed. The first two words were already wrong: 'tooth' instead of 'teeth' and 'foods' instead of 'feet'. Because I hesitated to cross things out, I only wrote the correct words into the margin, but I could already see Milad's chest sinking next to me. Many other words were correct because we had of course filled in the test together. Still others had a funny spelling (sausage = saufag). I corrected everything and gave the test to Milad. 'Which grade?' he asked. I felt so sorry for him that I jokingly wrote down a 2+. I pushed the sheet back to him and his eyes widened. With an air of awe in his voice, he slowly said: 'Woah, 2+!' 'And how many points?' he added. I tried to make it look as if I was calculating and gave him at least half a point for every puny attempt, totalling 17,5 fictional points. But Milad was still not done: 'Out of how many?' he asked. I counted the words and wrote down 22. Finally, Milad asked 'Can you sign it?' I did and wrote 'for an especially nice student' over the top. 'Great,' Milad said with a big smile, 'I'm going to show this to my parents.' Now it was presumably me whose eyes widened, for this twist caught me by surprise. In an attempt to cheer Milad up, I had just forged an official document which he was to take home and

present as genuine. 'Hey Nayla, Nelly, look! I had a 2+ in the vocabulary test!' Milad now called his neighbours enthusiastically, and the two girls looked with bewilderment from him to me. 'Listen, you cannot show this test to your parents,' I said quietly. 'It's not real.' Milad laughed and replied: 'Yes, I will. It doesn't matter if it's real or not.' A few days later, I asked Milad if he had actually taken the test home to his parents and his response was once again accompanied with a big smile; that he had and that they had been very happy.

What made this episode such an insightful one was that Milad seemed genuinely proud of his 2+ and systematically ignored how he had achieved it. Of course, he could not know that I was making the points and grades up, but the fact remained that we had completed the test together and, what is more, shortly after his teacher had announced the right answers. It was quite clear that Milad was so desperate for a good grade that he was willing to tweak his perception of reality somewhat, in order to achieve it. Self-deception in relation to grades was not limited to Milad and I observed it on several other occasions. During my own school time in Germany, there already existed a dictum which one can now buy printed onto postcards or mugs and which pupils today still cite, albeit with tongue in cheek: 'A 5 is almost a 4, a 4 is good, good means a 2 and a 2 is almost a 1.'

Quantification studies have repeatedly shown that numbers are closely associated with objectivity and facticity. Authors variously write about an 'aura of objective truth' (Merry 2016) or describe numbers as 'symbols to make truth claims' (Klausner 2018, p. 41) to refer to the same phenomenon. While Vormbusch argues that expert cultures, notably those which produce the numbers in question often do not believe in an 'objective representational praxis' (2012, p. 21) of numbers, the lay perspective is nevertheless frequently characterised by profound trust in numbers (see Desrosières 2001; Mari 2003 for related discussions on statistics and measurement, respectively). Resulting directly from the respectable epistemic status of numbers is the common presumption that they guard against self-deception. Crawford et al., for example, note in their historical analysis of body measuring that the trope of 'knowing your metrics – as a precursor to self-knowledge and the good life can be traced from the first public weight scales onward' (2015, p. 486). In fact, some of the earliest models of scales were marketed with pictures of slender women standing on the device and slogans such as 'She doesn't GUESS. She KNOWS' (2015, p. 489). Present-day self-tracking technologies are advertised with the same promise of insight into the frank truth of one's fitness and activity levels (2015, p. 480). As was already discussed, many of my research participants strongly preferred number grades to written evaluation because they felt that only marks could really offer reliable information about 'where one stood' or 'how one was'. Low grades present such a blunt, unadorned and painful 'truth' to the students – often interpreted as a verdict on their intelligence – that it can become unbearable for some. While it may seem that numbers guard against self-deception, an ethnography of the grade shows that they sometimes necessitate it instead. Nevertheless, even this most far-reaching

strategy to save one's self-image from the corruption through low grades has natural limits. Firstly, it is, much like explaining 'bad' grades away, an enormously laborious and energy costly process, in particular when students are faced with almost daily grading. What is more, self-deception is by definition a reflexive process. Even though it may allow students to temporarily convince themselves, the strategy does not extend to other people such as teachers, parents and peers. Teasing or parental disappointment continue to remind low-performing students of the picture their grades paint.

Discussion – on being measured

In this chapter, I have suggested that viewing grades through the lens of quantification allows us to analyse a widely acknowledged but little understood phenomenon, namely that grades have a strong impact on student self-images. Ethnographic approaches to quantification remain the exception, and yet the method offers a unique vantage point. Relying only on interviews or surveys limits the research to students' official and curated statements. In the present case, this would have created the false impression that grades have little to no influence on how students view themselves as a person. Accompanying my research participants throughout a whole school year allowed a more nuanced picture to emerge. The quantificational nature of grades implied the presence of measurement to the pupils, many of whom assumed a clear indicator–feature relationship between grades and intelligence. Grades not only significantly shaped the students' views about their own degree of 'cleverness' but also about the concept more generally. Intelligence emerged, much in line with Jo Littler's observation of contemporary discourse (2018, p. 4), as a solitary and linear feature. Moreover, grades commensurated students and thus enabled them and their teachers or parents to make comparative judgements about different pupils.

Contrary to the impression created by some of the scholarly work in education, however, my fieldwork did not lend support to the hypothesis that students straightforwardly endorse their grades and incorporate them into their self-image. In particular low-performing students instead draw on a portfolio of tactics for saving their identity from the potentially undermining effects of 'bad' and seemingly objective grades. Upholding alternative ways of valuing, reintroducing narrative, narrating the self numerically, and deceiving oneself must all be considered as answers to the quantificational character of grades. At the same time, it is this very nature and the resulting epistemic panache which makes grades so very difficult to challenge completely. Most of the existing work on grades is pedagogical in nature and considers marks only in terms of their usefulness (or lack thereof) for the process of learning. The findings in this chapter stress that this 'learnification' (Biesta 2009) does not do justice to students' lived experience. Grades must be placed in a wider theory of quantification and its role in contemporary society in order to appreciate their significant and lasting effects on students – far beyond learning. The

quantification of humans is, of course, not limited to the school context, and the results discussed therefore have broader implications. That numbers can be a key source of identity is an insight of particular relevance to a time when ever more intimate aspects of human life are recorded in numerical form.

The fieldwork suggested that students not only incorporated grades into their understanding of who they are, but also of what they deserve. In [Chapter 6](#), I therefore discuss how grades figured in students' account of merit, and the organisation of society around this concept.

Notes

- ¹ The contents of this chapter were first published, with only minor variations, as an article in the *Journal of Contemporary Ethnography* ([Rohde 2023a](#)). It is republished under a CC BY licence.
- ² Several months later, and shortly before the end of the Q2-year, Enes was not admitted to sit the final Abitur examinations because he had failed to collect sufficiently many points.

6. *'To assign people their place in society'* – Marks and meritocracy

On the 6 December – St. Nicholas' Day in Germany – I was sitting in a maths lesson of year five.¹ The children, usually a boisterous and hardly controllable crowd, were uncharacteristically quiet on this day. Mahmoud to my left seemed to have stopped breathing while he was fumbling with the silver chain around his neck. Fabrizio, to my right, did not say a word either and instead incessantly clicked the knuckles on his hands. Next to Fabrizio, Bahran exhaled 'Oh my God, my heart!' to which Milad from the next row added 'I'm so nervous.' Nelly, across the classroom, was several shades paler than usual and stared ahead into space without blinking. The reason why the children behaved so differently this morning was one Duha had told me just when I had stepped across the threshold upon arrival: 'We get back the maths exam today,' she had stated, raising her eyebrows above the face mask. Now Mr Bauer, the maths teacher, had just announced that he would start handing back the marked papers. When Mahmoud received his folder, he pushed it across the table to me and croaked 'Can you open it for me?' I did, whilst he was decidedly looking away, and when I found the big red encircled number at the bottom of the page, I could not believe my eyes. Mahmoud, infamous for his consistently low grades, had somehow gotten a straight 1, the second best possible result – even if he had sat the somewhat simpler of two versions of the exam. 'Wow, Mahmoud,' was all I could say. 'What?' he called, turning his head abruptly towards me with widely opened eyes. When he saw the mark on his paper, he shouted at the top of his lungs, so that everyone could hear 'OH MY GOD, I GOT A 1!' Amidst his exclamations of utter disbelief and sheer bliss, and after countless of envied congratulations from his friends, Mahmoud turned solemn. He lowered his voice somewhat and said to me 'I have understood it now. My parents always say school is for my future. And it's important, my future is not just like ten years.' Unfortunately, this 1 was to remain the only one Mahmoud received for the rest of the school year. After I had congratulated the boy and we had imagined what he could buy for his parental reward of €10, I stood up to walk around the room to see what the other children had gotten. While I talked to Jessica, who was somewhat disappointed about her 3, a voice travelled over my shoulder. The words were pronounced in a most serious manner and carried with them an air of finality. 'I'm just too stupid. I'm so stupid. Nothing will ever become of me. I won't achieve anything in life.' When I turned around,

the 11-year-old boy who had uttered these words looked directly at me. It was Nasir. A look at his exam paper revealed that he had received a 5–, just about the lowest mark one can get, short of a six which is usually only awarded for an empty exam paper. ‘Nasir, you’re not stupid,’ I said. He did not reply. ‘But you really think that, don’t you? That you must be stupid because of those grades? And that you won’t accomplish anything?’ Nasir continued to look straight at me, his large eyes beginning to fill with tears, and nodded silently.

Meritocracy in education

Meritocracy is one of the most widely endorsed and powerful political ideals of the current day (Littler 2018). The term can be loosely translated as the ‘rule of the best’ and revolves around the idea that within a given society, individuals should all have the same starting chances in the pursuit of success, status, and wealth, rather than being unfairly (dis)advantaged by ascriptive factors such as their socio-economic background, ethnicity, or gender. In its most well-known form, meritocracy today entails that those who combine talent with effort should ‘rise to the top’ (Littler 2018, p. 1). The meritocratic ideal is woven deeply into the way many of us think about fairness, justice, and desert. In Germany, the corresponding calls for equality of chances, as well as the importance of *Leistung* (performance) echo from the statements of previous chancellor Angela Merkel and her successor Olaf Scholz (see for example Oltermann 2021). In recent years, however, the meritocratic ideal has come under attack, notably from within the academy. Scholars have, for example, attested to the inequality which is licensed in the name of merit, and the false promises for upward social mobility it can promote (Dench 2006; Karabel 2005; Littler 2018; Sandel 2020). It has also been noted that a focus on equality of chances forces out an alternative equality of outcomes, which posits that ‘inequalities of wealth, power, and status should be kept to the minimum level possible’ (Karabel 2005, p. 4). Whilst critical conceptual awareness is on the rise, robust empirical research on meritocracy is a fairly recent phenomenon (Castillo et al. n.d.). Particularly the question where and by which means meritocratic thinking is learned and corroborated to account for its pervasive appeal remains underexplored (Mijs 2016, pp. 27–29). The school is a promising site to pursue this question for it is an institution which seeks to prepare young people for life in a given society and thus acts as a mediator for the latter’s values.

The history of the term meritocracy, beginning with Alan Fox and Michael Young, has been retraced elsewhere at length (Dench 2006; Littler 2018). What it serves to note here, however, is that meritocracy was first introduced as a dystopian and pointedly negative concept, but has come to be used as a ‘positive and valorised term’ (Littler 2018, p. 49). The German scholar Florian Waldow has argued that ‘on the level of a normative self-definition, meritocracy [...] is the undisputed leading ideal of Western-democratic societies’ (2011, p. 484, own translation). Emotionally impactful references to this effect can be found in the speeches of Donald Trump, Theresa May, and Barack Obama (Littler

2018, p. 1), and yet, it seems that the promise of meritocracy also flourishes in quite different political circumstances and cultural contexts. Kipnis, for instance, notes that in contemporary China, an ‘exam-centric meritocracy’ offers the opportunity for social mobility as a compromise for the lack of democracy (2012, p. 197), and Japan has been dubbed a country on the ‘meritocratic frontier’ (Kariya and Dore 2006). Allusions to meritocracy can also be found in South African, South Korean, and Singaporean discourse (Littler 2018, p. 26).

The word ‘*Meritokratie*’ is rather rarely used in German public and political discourse, although this should not blind one to the presence of its spectre, notably under the terms ‘*Leistungsprinzip*’ (performance principle) and ‘*Leistungsgesellschaft*’ (performance society). Calls for more equality of chances, rather than outcomes, are to be found galore in the official utterances of Chancellor Olaf Scholz, Angela Merkel, and the former German Minister for Education, Anja Karliczek. Karliczek’s current successor, Bettina Stark-Watzinger, labelled the ministry a ‘ministry of chances’ and stated that a guiding political question for her tenure was to be ‘Have we given everyone the same starting positions? Does everyone have the chance to become the pilot of their life?’ (Stark-Watzinger 2022, own translation).

Before moving on to a discussion of the role of education for meritocracy, it is helpful to draw attention to a distinction between two types of meritocratic imagination. ‘Prescriptive meritocracy’ refers to the idea that society ought to be organised around merit, whereas ‘descriptive meritocracy’ is the belief that this is already the case (Darnon, Smeding, and Redersdorff 2018; Son Hing et al. 2011). In the context of this chapter, I refer only to the latter concept, as my interlocutors consistently assumed that the society they lived in was meritocratic in nature.

Even if authors and commentators differ in their view on whether meritocracy is a reality (Markovits 2019) or an ‘unfulfilled promise’ (Mijs 2016), there is a large consensus that the education system is central for upholding the meritocratic ideal. Some of the earliest work in this tradition was conducted by Pierre Bourdieu and Jean-Claude Passeron, as well as by Paul Willis. In both *La Reproduction* and *Learning to Labour*, it is argued that contemporary education reproduces and legitimises class inequalities. Bourdieu and Passeron (1990) frame their study of the French education system in terms of habitus and cultural capital, and argue that the lower-class students possess less of what is desired in the school system and are thus bound to fall behind. Grades and examinations certify social differences and create a phenomenon which Young had already predicted in his satirical novel *The Rise of the Meritocracy*: both the ‘winners’ and the ‘losers’ within the system feel as though they deserve their place. Peter Herdegen’s (2008) and Heike Solga’s (2005) work on Germany corroborates this finding. Paul Willis, in his classic ethnographic study of working class boys (‘lads’) in England (1977) equally agrees with Bourdieu and Passeron, but adds the important insight that even the students’ resistance ultimately cements their socio-economic disadvantage. By developing a counter-school culture which rejects the importance of

education and qualifications and instead celebrates physical labour, working class boys prepare themselves for the working class jobs which inevitably wait for them after school.

Despite the determinism inherent in the education system, some lower-class individuals will succeed to climb the social ladder, but rather than undermine the meritocratic appearance of the system, this further reinforces it (Sullivan 2002, p. 146). Also among contemporary scholars, there is widespread support for the conclusion that the education system is an essential constituent of the 'meritocratic infrastructure' (Kariya and Dore 2006). It has been shown that, through a variety of pathways, the school reinforces students' socio-economic status, rather than redress inequality (see Mijs 2016 for a brief review). Moreover, it has been observed that 'intense and competitive' meritocratic education widens the gap between the most and least skilled, beginning early in life (Markovits 2019, p. 64). As Darnon et al. summarise, the school transforms 'social inequalities into merit-based inequalities' and thus a 'group-based hierarchy into an individual-based hierarchy' (2018, p. 524). Even though schools and universities often act as perpetuators of inequality, the public nevertheless remains attached to the merit-for-educational-achievement narrative on an ideological level and largely believes in the promise of meritocratic education as a system for upward social mobility (2018). In fact, some recent studies in psychology suggest that the school is one of the key loci in which meritocratic thinking is learned. Wiederkehr et al. show that meritocracy is a central norm in the school context, fostering the belief among students that 'failure' is exclusively the result of internal, rather than systemic factors (2015, p. 770). Generett and Olson describe meritocracy as a master-narrative of the school, which is 'normative, internalized and reproduced' (2020, p. 399), for example through teachers' story-telling.

Research on the meritocratic ideology in school is only beginning to emerge and, as a result, much remains to be investigated. In his 2016 review on the matter, Mijs calls not only for paying closer attention to the question where meritocratic beliefs come from, but also to the particular role of grades in the definition and incorporation of merit (2016, pp. 27–29). In the following, I present my research participants' arguments in support of grades and discuss how their reasoning aligns with the meritocratic ideology. By way of explanation, I offer an analysis of how the students' defence is not simply a reaction to being graded, but also to being quantified.

Wanting to be graded

Grades for betterment

The first common reason why students explicitly wanted to be graded was that they sought to receive feedback. The pupils often argued that they needed grades in order to know 'how they did', in relation to written tests and examinations, or 'where they stood'. Robert Paul Wolff, a philosopher of education,

distinguishes between three functions of grades (1969). The students' replies mirror what Wolff perceives of as the primary, and in his eyes, the only legitimate function of grading, namely criticism. 'To learn to submit oneself to the discipline of a standard, even if it is self-imposed [...]' (1969, p. 461) is for him the very purpose of education, and grades assist this exercise if they are used to 'correct mistakes and enforce excellence' (1969, p. 459). However, the way that students talked about grades often went beyond such feedback and evoked a narrative of bettering oneself more generally. When I asked 11-year-old Lena why she thought grades existed, she replied: 'So that you know you have to get better? When you for example have a 4, you have to get better. So that, I think ... you know how you can change yourself.' This use of marks would, in Wolff's theory, go past criticism and enact a second function, namely evaluation. Evaluation is the measuring against a predefined standard and crucially involves labelling performance as 'good' or 'bad'. Wolff argues that, educationally, nothing is gained by these denominations and that evaluation rather has its place in the professional world where the qualification of a candidate seeking admission to a profession must be judged on the basis of some performance (1969, p. 462).

Nevertheless, the narrative of betterment was strongly entrenched in my fieldsite, and affected how students thought about grades, as well as the repercussions that they instigate. A case in point was retentions. Many teachers told me that the consensus within their profession was that having a student repeat a year due to insufficient results often did more harm than good and that they were asked to avoid this where possible. Surprisingly, however, it was especially the lowest-performing students, who were most at risk of losing their whole group of classmates, who defended this policy. When I asked Omar (11), who was known for his 'bad' grades in almost every subject, what he would think if retentions no longer existed, he replied after a deep breath: 'I don't find that normal. If you can't go back [a year] then I think that's kind of strange. Because if you get bad grades then I think you should go back.' Dennis (11) answered similarly: 'If you write bad grades then you have to repeat [a year], so that you always get better ... and know more about things.'

The trope of students having to constantly better themselves was explicitly enforced by the school. At the end of half-term, the year five students, for instance, had to attend a consultation session with their class teachers. They were asked beforehand to fill in an 'action plan' for the new quartile in their school planners, setting out how they were envisaging to improve themselves. The document closely resembled a target agreement which employees complete as part of contemporary human resource management (Vormbusch 2012). Some of the headers were 'My aim(s)', 'Set deadline', 'What do I have to do?', 'How do I know if I have reached my goal?' and 'Set date of review'. The form was then to be signed by the student themselves, the parents and the 'mentor' – in other words the class teacher. In some classrooms in the school, student avowals of betterment were displayed publicly. In a year eight class,

each student (aged 14–15) had their resolutions laminated and pasted onto the right upper corner of their desk. One of the notes read: ‘I would like to revise more and put my hand up more so that I get better grades.’ Other students had written ‘I want to concentrate’ or ‘I no longer want to talk to my fellow students, so that I get better grades and so that I catch everything.’ In a different room, a collage of all students’ plans for betterment was attached to a cupboard (see [Figure 6.1](#), translations are given in [Appendix A, Figure A.1](#)). Most of the intentions in these examples were either directly concerned with getting better grades or ultimately served this purpose, such as through revising more or putting one’s hand up more in class.

Amongst the teachers, there circulated the idea that a significant proportion of their students did not care at all if they received a bad grade. My fieldwork encounters with pupils did not support this: high- and low-performing students alike continuously vowed to work harder and to become better – both within and beyond the rituals of promised enhancement which the school demanded of them.

The emphasis which the school and its young attendants place on the constant work of betterment mirrors a quintessentially meritocratic motif. Littler argues that especially the recent form of neoliberal meritocracy stresses the importance of effort for success. Tropes such as ‘anyone can do it’ if only they work hard enough ([Littler 2018](#), p. 122) are popular reminders to never rest in the pursuit of one’s instilled wish to ‘make it’ ([2018](#), p. 121). Karabel observes a similar dynamic in his critique of Ivy League admission policies which are driven by the meritocratic ideal. He cites a group of Harvard admissions officers who state that many of their alumni, arguably the performance elite, ‘seemed like dazed survivors of some bewildering life long boot camp’ ([2005](#), p. 547). My fieldwork showed that the imperative to exert oneself extended to low-performing students too. Especially for those who may have felt that they lacked intelligence, it was effort, the second half of Young’s satirical merit formula ($\text{Intelligence} + \text{Effort} = \text{Merit}$), which often represented their only hope in the quest for accomplishment. In his discourse analysis of contemporary German success semantics, Bröckling notes a call for self-improvement which is directed at all members of society. He argues that there exists

a dynamic of self-optimisation which finds no resting point in itself. May the chances be distributed ever so unequally, anyone can improve their position. Vice versa, everyone is threatened by descent, potentially into the abyss. Therefore, one will never complete the work on oneself ([2014](#), p. 78, own translation).

Grades, as a form of quantification, are a powerful vehicle for this ‘effort for merit’ narrative since numbers are effective in creating the responsible individual ([Miller 2001](#), p. 393; [Vormbusch 2012](#), p. 222). Especially Vormbusch’s work on calculative tools in human resource management is instructive for

an employee) can ascend and descend with all the attached consequences for social status, gratification, reproduction and appointment of means, or for their chances of self-realization, power, and participation (2012, p. 25, own translation).

The individual is called upon to maintain or improve their position in the at once quantified and competitive space in which each movement is made visible through numbers. For the individuals within a field which is ruled by numbers in such a way – the school being one of them – it becomes increasingly difficult to legitimise and communicate their actions and status without drawing on quantification (2012, p. 222). As a result, taking responsibility for one's numbers becomes the imperative. Vormbusch concludes that 'sociocalculative practices do not aim at the transformation of the social in numbers but rather at the social self-transformation in the medium of the calculative' (2012, pp. 26–27, own translation). By providing each student with a numerical figure of performance, the school thus not only relays feedback but also calls on the receivers to react to it. Acknowledging the students' need for feedback, I often asked my research participants if they could also imagine receiving it through conversations with or texts by their teachers. The responses were mixed, but there was a significant proportion of students who believed that only grades could offer true insight. The 18-year-old Malte clearly favoured numbers over texts because he thought that the former were better suited to confront students with their inadequacies, as he worried that teachers might soften the blow in a written report:

If someone gets a very negative feedback in the sense of a 5, then nobody would write it as hard as a 5 hits a student. [...] And then it might sound to the student a little bit like 'Ah well, then I can rest on this.'

Getting better marks or keeping good ones up are unquestioned virtues of school life, and in order to achieve these goals, pupils must constantly be driven by the will to become better. If students at least try but fail in improving their grades, this may be excused by teachers with reference to a lack of innate 'intelligence'. The students I met, however, in their attempt to maintain a positive self-image, would hardly admit to having tried and failed and would rather claim that they failed to try ('I didn't revise'). This tactic, while mitigating the effects of low grades on the pupils' identities (see Rohde 2023a) on the one hand, violated the overarching imperative of effort on the other hand and was thus sure to reap the discontent of teachers.

Grades for organising society

The second argument in favour of grades was voiced primarily by older students. When Abitur (A-Level equivalent) students explained to me what they

thought marks were good for, a common theme crystallised out of many of the responses. Eighteen-year-old Maria, for instance, mused as follows:

[The purpose of grades is] to assign people their place in society, so that a person who has always revised well or whatever, would rather become a doctor. That is a very important job, lives depend on it. And someone who has different strengths would rather ... I don't know ... become a painter or decorator.

Leila, 20, who barely passed her Abitur later in the year, expressed the same idea in relation to university admissions:

[Grades are there to] simply say something about performance for university ... so that the bad one's don't end up there somehow. Yes, so definitely to cull the good ones from the bad ones.

The 18-year-old Luca differed noticeably from the other students in his class. He was from a relatively well-off family with a hunting hobby, athletic, and always dressed in high-quality clothes. Luca had a set of respectable grades, even though they were being 'dragged down' by the fact that he never spoke up in class. Despite the socio-economic differences between Luca, and Maria and Leila, he voiced a similar opinion on the purpose of grading:

Well ... (he takes a deep breath) ... that's difficult. I believe grades are just there to somehow make out the good ones in the overall picture of pupils so that they ... then get the right jobs.

In the eyes of the older students, grades were essential for organising society in a certain way. That the 'good ones' be sifted out and admitted to the highest-status professions is the meritocratic ideal in a nutshell. The medical profession mentioned in Maria's quote was evidently the epitome of ultimate social accomplishment in many students' view and exerted an almost gravitational pull on pupils across age cohorts. A great many students told me that they wanted to become doctors, even where this aim was clearly out of reach given their current school performance. Even the 11-year-old Milad, who actually wanted to become a policeman, was carried away by the medicine-frenzy in his peer group. When I asked him what he thought grades were for, Milad answered: 'So that you can get the Abitur and ... become a doctor and stuff.'

Both the students' narrative about spotting and rewarding the 'good ones', as well as the widespread burning wish to become a medic, throws into relief the most far-reaching critique of meritocracy. Alan Fox and Michael Young, but also contemporary commentators such as Jo Litter (2018), Michael Sandel (2020), Daniel Markovits (2019), Jerome Karabel (2005), and to some extent Nicolas Lemann (1999), argue that meritocracy results in a starkly unequal society. In other words, 'there is no top without a bottom' (Litter 2018, p. 3).

This is also reflected in Hannah Arendt's statement that 'meritocracy contradicts the principle of equality, of an egalitarian democracy, no less than any other oligarchy' (1954, p. 4). It does not matter so much how merit is defined for this purpose. Whether it be measured in grades as in Germany and many other nations, in the form of SAT or IQ scores, or even in terms of a 'well-rounded character' such as in Ivy League admissions – the inexorable result is that a large group of people must fail to measure up in order to identify by contrast those that succeed. As Lemann puts it in his history of the SAT, meritocracy turns on the Cinderella schema: 'The educational system would fit glass slippers on the feet of a lucky few, who would be whisked away to college and trained to lead American society' (1999, p. 25). Public disputes tend not to concern this basic principle but rather limit themselves to the design of the slipper, that is to the question of how to best select the prospective elite. Nevertheless, the delineation of merit does follow a discernable pattern, as Karabel has stressed: 'The qualities that come to define "merit" tend to be attributes most abundantly possessed by dominant social groups' (2005, p. 549).

The hierarchical nature of grade-mediated meritocracy is deeply entrenched in the German school system, from the early tracking of students into 'better' or 'worse' school types (Letendre et al. 2003), to the high-school diplomas with differing degrees of social status. Even within comprehensive schools, there exists the differentiation between more basic and advanced courses for some subjects (G- and E-courses, respectively). Empirical research suggests that ability grouping is harmful particularly for low-performing students in terms of learning (Mijs 2016, p. 18). Moreover, the framing of the two course types fostered a strong sense of inferiority in those who were in the lower-performing classes. Fourteen-year-old Daniel, himself only in G-courses, made this aspect quite clear when he said that teachers in his classes should use simpler words, for it would otherwise not be appropriate to the 'league of humans' that they were talking to.

Grading lends itself well to representing the hierarchical meritocratic ideal. Quantification here entails commensuration, in the sense that students of different personalities, backgrounds, with different interests and aspirations can be grouped neatly on a single scale. This transformation of quality into quantity not only enables but imposes judgements of relative rank: higher or lower, better or worse. This is also what Wolff alludes to when he states that besides criticism and evaluation, the third function which grading performs is ranking. In fact, he argues, this is the only reason why grades are still in use despite their questionable pedagogical value (1969, pp. 462–63). Criticism could arguably be given in a more helpful and nuanced way through other means, and evaluation, as was already discussed, serves no educational purpose at all in his eyes (1969, p. 462). The German education scholar Jörg Ziegenspeck also believes that the only activity which grades are truly effective at, is ranking (1973, pp. 59–60), and thereby the screening and distribution of students for positions of different social worth. As became apparent in my fieldwork, those ranked lowest in this number-mediated 'singular social hierarchy' (Kipnis 2012, p. 189) were often its fiercest defenders.

Grades for (a good) life

Closely related to the older students' argument about organising society was a third reason for wanting to be graded, expressed mainly by the younger children. They argued that they needed grades in order to achieve things in the future which were important to them. The single most salient of these 'things' was a job. In fact, it was an unanticipated finding that – without my prompting – in but two cases, the interview conversations with the 10 to 11 year olds always turned towards their future profession or employer. When these students stated that they wanted grades, I queried why this was and what they thought marks were for. As the quotes below detail, for many of my youngest interlocutors, grades were decisive for finding employment:

So that one is good, and gets on, and also gets good work. (Omar, 11)

So I think when you do a job, they can look at your report and see how you are. And if you are good, then they will hire you, and if you are not so good then they don't want ... to. (Nelly, 11)

Because there you can judge how one is, in which subject. And one can judge in which job one will go, in which studies one will go. And then one can just make a work out of the grades. (Valentin, 11)

Jessica, also 11, provided an interesting metaphor. She too was in favour of grades and stated: 'You need a report to apply for a job ... and grades for the report (she laughs). It all hangs together like a chain.' 'And what would be the final link in that chain?' I asked. Jessica replied: 'The job, I would say. So, school-work, participation, grades, report, job.' For some of my interlocutors, the connection between grades and employment was perceived as so strong that grades mattered for subsistence and survival.

Dennis (11) stated:

In general you get grades so that you get a good job. And with a job you get money to buy yourself something. [...] Yes so that you get a good job, then get money to buy food and stuff. (Dennis, 11)

Antonia, the 14-year-old top student of year nine reasoned similarly when I asked her what she thought the effects of low grades were on students:

It definitely does something to you (she laughs) because ... you know that the teachers are disappointed. You are disappointed with yourself. In most cases the parents are also disappointed. You mess up your future, somehow with these bad grades because they are always drawn upon. If you don't get good grades, you won't get a

good job, you'll get little money, you'll have no food and so on. That is always quite a lot of pressure.

In the eyes of the children, grades were not just vital to survive or get by, but also to get access to the finer things in life. The pupils often straightforwardly linked 'good' grades to 'good' jobs and high status, whereas 'bad' grades would lead to 'bad' jobs and low status. In the interviews, a picture association task was included. The images were taken from a set used in coaching and therapy, loosely organised around the theme 'biography' (Opitz and Ruhe 2016). Students were asked to select as many images as they thought fit the topic 'school and grades' and to explain their choice. Omar selected the image of a lordly entrance gate and said that he had chosen it because 'If you get good grades 'n stuff, you also get a good house.' Antonia articulated the same argument but presented it the other way around. She selected the picture of a decrepit industrial building and explained it as follows:

I chose this because it shows pretty run-down residential houses. I always imagine that if I have bad grades, I would someday live in such a house where there's screaming and gun fights every night. It makes you quite scared.

The pupils' parents often played no small role in encouraging this kind of thinking. Valentin compressed the phenomenon into a concise statement when he said rather bitterly: 'My mother always says that if I write bad grades and don't want to do anything, that um ... I'll become a cleaner (Putzmann).'

It has been rightly observed that the meritocratic ideal entails uncritical status judgements in the sense that some professions or classes, including their respective status symbols are considered superior to others (Littler 2018, pp. 6–7). As was already discussed in the previous section, the use of quantification in social settings aligns well with this ranking of humans. However, a point which has received little attention in current writings is that meritocracy is fundamentally a *transactional* model. Unlike equality, which is by definition unconditional, meritocracy offers rewards only in exchange for something. Throughout my fieldwork, it became apparent that the children with whom I worked navigated a context which signalled to them that the important and good things in life (such as a livelihood or social security) are conditional – in this case upon school performance. Grades emerged as a 'merit metric' and were defended in their capacity as a currency. It was as if I had asked students 'What do you think about money? Do you think it should exist?' and they had replied with the argument 'Yes, because otherwise I couldn't buy anything'. As already observed in Chapter 5, quantification suggests the presence of *measurement*, rather than estimation or subjective evaluation – even where this conclusion is unwarranted. Grades signal to their recipients that performance is 'measured', thereby fostering the acceptance of the transactional model of meritocracy by making it appear fair. A further reason why

grades enjoy such strong support from students is their legacy as a metric. As Sally Engle Merry has pointed out in her work on quantitative indicators, the most powerful of them are those which are thoroughly institutionalised and supported by ‘a coherent and attractive narrative’ (2016, p. 211). She adds that the longer a metric is around and accepted, the more ‘it comes to provide a kind of unassailable truth’ (2016, p. 25). Grades can be traced back at least to the European Jesuit schools of the 16th century (Ziegenspeck 1973), and have since then developed into a truly global technology. In school systems all around the world, grades are marketed not only as a means to identify the ‘brightest and best’, but also as a young person’s ticket to a better life. Many of my interlocutors found it difficult to envisage a world without grades – perhaps because it would have required imagining a different society altogether.

Discussion – of close companions

At first glance, it appears puzzling that low-performing students defend grades – the very technology which perpetually reminds them of their academic ‘failure’. The question why a disadvantaged group would argue in favour of the status quo, rather than long for change in their own interest is the subject of system justification theory. Scholars in psychology have argued that it often ‘captures social and psychological needs to imbue the status quo with legitimacy and see it as good, fair, natural, desirable, and even inevitable’ (Jost, Banaji, and Nosek 2004, p. 887). Doing so may be what makes it possible for people to navigate their lives with trust and hope – despite living in an objectively unjust system (Jost and Hunyady 2005, p. 261).

Against this backdrop, it may not come as a surprise that low-performing students argue for receiving grades in school, but *how* students do so reveals much about their ideological views. During my fieldwork, it became apparent that students largely defended the grade on the basis of meritocratic notions. For the pupils, grades served as a vital indicator in a continuous quest for betterment, they allowed for the hierarchical organisation of society based on performance, and represented the ticket for upward mobility within that hierarchy. These findings chime with psychological research which has identified meritocracy as one of the most pertinent system-justification ideologies of our time (Jost and Hunyady 2005, p. 260). On an empirical and analytical level, this chapter shows that the grade is a key vehicle for fostering meritocratic thinking in young individuals. On a theoretical and conceptual plane, I have argued for the need to consider grades as an instantiation of a much larger technology – quantification – to make sense of this finding.

Quantification lends itself well to representing the meritocratic ideal. Its ‘aura’ of objectivity (Strathern 2000a, p. 8) creates the convenient impression that merit can be singled out and measured, so as to assure seemingly fair allocation decisions on its basis. Numbers can moreover be mobilised effectively to achieve the kind of individual responsibility characteristic of the ‘entrepreneurial self’ (Bröckling 2007) desired in the most recent form of neoliberal

meritocracy (Littler 2018; Vormbusch 2012, p. 222). However, numbers not only serve the meritocratic ideal, they can also evoke it in their own right. Where quantification is brought to bear on humans, it usually entails commensuration – ‘transforming all difference into magnitude’ (Espeland and Stevens 2008, p. 408) and effectively creating a ranking. In many social contexts, such a ranking can be readily interpreted as a merit-based hierarchy. In other words, from ‘higher’ or ‘lower’ to ‘better’ or ‘worse’, it is often only a small step to ‘deserving’ or ‘undeserving’.

Scholars have identified the education system as a site where meritocratic thinking is learned, but empirical work on this process, and especially on the role of grades therein is largely missing. The results of this chapter shed light onto the specific ways in which grades figure in the meritocratic imagination. The ethnographic insights highlight that the meritocratic ideal is not only transmitted via narrative (Generett and Olson 2020), but also perpetuated through a certain technology. The role of quantification for meritocracy has hitherto not been addressed, and the results from this study motivate further research on the question.

The present findings are also relevant to the areas of education and assessment. Bourdieu and Passeron, as well as Willis, astutely observed that inequality and injustice are systematically preserved through education. Littler argues that one of the problems of meritocracy is the denial that ‘climbing the ladder is simply much harder for some people than others.’ (2018, p. 5). Research on educational injustice in Germany, but also elsewhere, has made it abundantly clear that the kinds of people I met in the field face a variety of barriers to success in school, which their better-off counterparts do not. Nevertheless, the school system presents itself as largely fair to these individuals by judging merit on the basis of outcomes, that is, performance. Even if the pupils were able to mitigate their disadvantage through sheer effort, there would simply not be enough ‘room at the top’ (2018, p. 5) to accommodate all of them which is why meritocracy, in Littler’s eyes, purposefully ‘functions as an ideology to obscure inequality’ (2018, p. 7). My ethnographic work shows that the school grade is a crucial constituent of this process. Marking not only cements (dis)advantage, but suggests to students that merit is measurable, and thus creates the impression that social status, whether high or low, is earned. An important implication for further research is that grades should not merely be investigated in their pedagogical capacity, as tends to be the case in educational research (Biesta 2009). Assessment practices are far more than tools for learning – they are inherently political. Quantitative assessment is well-adapted to a selective education system with meritocracy as its guiding principle. In fact, Wolff goes as far as to say that the only reason why grades are employed is their power to rank. As he writes:

It is really rather startling to reflect that the sole justification for all that frenzied, anxious test-taking and grade-grubbing which absorbs millions of American teenagers is the differential allocation

of high school seniors to colleges in varying degrees of demand' (1969, p. 463; see also Ziegenspeck 1973 who makes the same point for Germany).

A substantial body of work attests to the detrimental effects of marks on students, from inducing anxiety and decreasing motivation to impacting students' self-image and mental health (Högberg et al. 2021; Rohde 2023a; Rohde 2023b; Schinske and Tanner 2014). Nevertheless, grading enjoys an overwhelming support in society, also from students. Scholars and practitioners have put forward innovative proposals for 'de-grading and de-testing' education (see for example Bower and Thomas 2013; Kohn 2013), but they tend to be met with scepticism and deep-seated fears. The research at hand highlights that alternative approaches to assessment only make sense in tandem with political change. A move away from quantitative evaluation could benefit students in many ways, however, it cannot solve the problem of inequality in education in itself. As Wolff rightly observed, even text-based reports in lieu of grades would soon degenerate into 'discursive rankings' (1969, p. 464). He argues that

so long as some colleges and professional schools really offer better educational opportunities and competitive edge in the scramble for wealth, power and status, there will be more applicants than places at every stage in the educational system from Kindergarten to grad school (1969, p. 463).

He concludes that 'only a social revolution of the most far-reaching sort could free education from the twin curses of evaluation and ranking' (1969, p. 464). It is indeed difficult to see how equality – as fixed in so many national constitutions – could be compatible with quantitative assessment that seeks to rank students for the purpose of allocation. However, merely de-grading school will not be effective if it is not accompanied by political change that has the pursuit of equality as its explicit aim.

Lastly, the present work deepens our understanding of numbers and their role in contemporary society by showing that quantification can be laden with political values and serves some ideologies better than others. Specifically, this work unearths a tight link between quantification and meritocracy, each reinforcing the other. Taken together, the results from this chapter encourage further inquiry into the relation between meritocracy and quantification – also outside of school – for it seems that we cannot hope to understand one without the other.

The fact that school marks are pivotal for meritocracy, and thereby the distribution of social graces, has an important consequence; namely, that they are imbued with power. Students generally accept the necessity of good grades, which is why their promise – or conversely the threat of low grades – can be used effectively to regulate student behaviour. In Chapter 7, I analyse how

grades fit into the disciplinary toolkit of the school and how students experience being disciplined.

Note

- ¹ The contents of this chapter were first published, with only minor variations as an article in *Economy and Society* ([Rohde 2023b](#)). It is republished under a CC BY licence.

7. *'Mostly in the heart'* – Discipline and the corporeality of being graded

On a dark and thundery Monday morning in February, all classes in the school had been cancelled. It was the consultation day, on which each student was to come in for a session with their two class teachers to discuss their half-year report which they had received the week before. In the year five classroom, four square desks had been pushed against each other next to the door. Mrs Sievers and Mr Bauer were sitting on one side, I was facing them – the empty chair next to me waiting to be filled with a pupil. Outside, a powerful storm was raging, pushing heavy rain against the window panes in bouts. A small layer of mist had formed just above the metal roof of the opposite building, set against a deeply petrol coloured sky. It was unusually quiet outside on the tiled hallways and only sporadic footsteps could be heard echoing. Finally, Jessica stepped through the open door, her mother entering after her. Jessica's mother was a rather short woman with a butch haircut and metal framed glasses. She introduced herself to those present with a submissive air, bowing almost, and it felt as if the hierarchy was set from that moment onwards. Eleven-year-old Jessica was herself relatively tall and corpulent, and wore a pair of dark-rimmed children's glasses. She had short, sturdy blonde hair, fair eyebrows and lashes, and was dressed today in jeans and a yellow hoodie with a winking emoji on the front.

From my previous conversations with Jessica, I knew that she was German-born and lived with her mother and half-brother. One of the first things she had told me was that she had spent the first part of the school year living in a day hospital, because of 'stress' at home. It later became clear that this stress stemmed from intense fights with her mother, and Jessica had only recently moved back home. When she now sat next to me, she greeted me with a pointedly, almost artificially happy: 'Hi, Miss Rohde!' After her mother had drawn up a chair next to Jessica, the latter now found herself framed by two adults and faced by two others. She went quiet.

'Do you have your report with you?' Mr Bauer asked. 'Oh... no!' Jessica replied, hit by a sudden realisation. Mrs Sievers lifted an eyebrow and Jessica's mother let out a sharp sigh. 'OK, well, we have your grades here anyway,' Mr Bauer said, somewhat irritated, and brought up the digital class-book on his iPad. It turned out that Jessica had several 2s, including one in mathematics, which Mr Bauer, also the maths teacher, speculated was probably due to good homework support in the hospital. After a while, Mrs Sievers said: 'We need

to talk about English now. It doesn't look good.' Jessica whimpered, her lips curled into a pained smile and she looked down at the table. So far, she had only received 5s and 6s in the vocabulary tests and her overall grade was a 5. 'I always try to learn the vocabulary,' Jessica said, 'but ...' 'No, you don't,' her mother cut across her. 'I keep telling her to revise. I know she's not a stupid girl. I block her phone so that she's not distracted. I always say to her that she's supposed to learn her vocabulary in the evening, and not listen to the radio.' 'But I can't fall asleep without it,' Jessica said. 'Nonsense. You didn't have a radio in the hospital.' 'No,' Jessica answered defiantly, 'but a TV.' The mother's murmured protests were drowned by the words of the teacher who talked over her. Mrs Sievers proceeded to present Jessica with six different ways of learning for the weekly vocabulary tests (post-its, small flash-cards and so on). The girl nodded silently with an overwhelmed expression, and no longer replied. The best option, Mrs Sievers concluded, would be a computer programme called *Phase6*. Jessica's mother chipped in to say that their laptop was not working and that they did not possess a tablet either. Mrs Sievers answered that she believed the app could also work on a smartphone. 'It costs €2.50 per month,' she added. 'Oh that's hardly anything,' Jessica's mother replied. With a raspy laugh which was difficult to interpret, she said to her daughter 'I'll just deduct that from your pocket money.'

Numbers for discipline

Early on in my fieldwork, it became apparent that students are routinely disciplined with grades and this impression was corroborated in interviews and observations throughout the year. The insight is hardly ground-breaking for a wide range of books and articles in education sciences have attested to the disciplinary nature of the school, sometimes explicitly addressing the role of grades therein (see for example Hoskin 1990; Ryan 1991; Grant 1997). Abstracting from the school setting, a similar conclusion can be reached for numbers more generally. Within the quantification literature, a recurrent theme is that they are often used to control individuals. Scholarship which lends support to this observation is, for instance, that on audits (see for example Shore and Wright 2015), and the governing of staff, institutions or even whole populations with the help of accounting techniques and statistics (see for example Grek 2009; Miller 2001). Other, less well-researched, examples of control through numbers are Amazon employees kept perpetually on their toes by the looming 'rates' they have to make (for example packages assembled), or the data-driven surveillance of lorry drivers through devices in their cockpits (see for example Haubursin 2017; Lecher 2019). As Espeland and Stevens have argued, the control exercised through quantification often takes the form of discipline (2008, p. 414).

In this chapter, I probe the relation between quantification and discipline further, particularly by adding the understudied perspective of those

being disciplined, in this case those being graded. Michel Foucault is of course the authoritative figure on discipline. I will stay true to the scholarly tradition of drawing on his work, especially *Discipline and Punish* (1990), for it is here that the school context is explicitly addressed. In the first part of this chapter, I analyse ethnographic material to investigate the functioning of grades as a disciplinary tool which both punishes and rewards. I add two specifications on agency, namely on the active use of power and the emancipatory potential for (student) resistance, which have been less dealt with in Foucauldian theory. In the second part of the chapter, I deepen the analysis by focusing on an aspect of discipline which is of particular relevance to both grades and quantification, but often overlooked: the physical body.

Grades in the disciplinary repertoire of the school

Michel Foucault famously argued that, in 18th- and 19th-century Europe, power underwent a significant shift from being enacted and displayed by a sovereign, to being dispersed within a network of disciplinary institutions and techniques. Particularly in his seminal work *Discipline and Punish*, Foucault details how the prison, but also the hospital, the factory, the military and the school, became sites of a new kind of power which controls by forming docile and obedient bodies. While Foucault does not ponder at length the role of quantification in disciplinary power, its importance shines through especially in relation to what he calls ‘normalising judgement’. The latter turns on the introduction of a ‘normal’, a standard, to which all individuals must adhere or be made to adhere through punishment, correction, and training. As Foucault states, ‘it measures in quantitative terms and hierarchizes in terms of value the abilities, the level, the “nature” of individuals’ (1990, p. 183). Further, ‘the norm introduces as a useful imperative and as a result of measurement, all the shading of individual differences’ (1990, p. 184). In other words, normalising judgement implies commensuration, for it needs to quantify that for which it seeks to judge the degree of deviation from or conformity to the norm.

For the French scholar, the school is without a doubt a disciplinary institution within which individuals are made docile, ‘fabricated with the use of three simple tools: hierarchical observation, normalizing judgement and their combination in a procedure that is specific to [disciplinary power], examination’ (1990, p. 170). *Discipline and Punish*, although expressly concerned with the origins of the prison, is peppered with references to the school setting and contains many a vivid historical depiction of school children being trained, corrected, punished, observed, and examined much like prisoners, soldiers, or madmen. Foucauldian theory was, perhaps unsurprisingly, long absent from education scholarship, for many academics in this field perceived of his work as a denunciation of the pedagogical project proper and saw their

widespread belief in the autonomous student subject challenged (Balzer 2020, p. 463). Since the 1990s, however, education scholars' 'ignorance and defence' (2020) towards Foucault's writing has been increasingly replaced with rapidly growing interest. The trajectory of this shift cannot be retraced here but what can be said is that especially *Discipline and Punish* continues to exert a strong influence on projects to understand the history of pedagogy, to reflect upon its categories, and to analyse the empirical reality of current education (2020, pp. 463–70).

Having spent 12 months in a school, in an epistemically privileged position of being neither student nor teacher, I can assert that the disciplinary dimension of the school is one which can hardly be overlooked and would be negligent to ignore. Examples of disciplinary techniques of course include those already discussed by Foucault, such as seating plans, timetables, or 'small scale model[s] of the court' (1990, p. 178) situations, such as those in the introductory vignette, where students have to account for their grades and behaviour. A different case in point was a common form of punishment in my fieldsite. Students who had committed an 'offence', for instance fighting or insulting someone, had to spend the breaks sitting at a small table right next to the entrance to the staff room, for all passing teachers to see. Moreover, in order to keep students from withdrawing from class and wandering about, the use of the toilet was strictly regulated for the youngest pupils. An A4 sheet was pasted onto the teacher's desk in the year five classroom, bearing the title 'Use of the toilet during class time allowed only once per half year.' Below it was an alphabetical list of the students, some of the names already bearing a tally mark to signal that they had used up their right to go to the toilet during class time in a given subject.

Many more examples of how the school disciplines pupils could be named but I will now focus on the role of grades for this purpose. Grading traverses the three key instruments which Foucault sees as constitutive of disciplinary power. As was shown in Chapter 4, grades establish the visibility which enables *hierarchical observation*, they fix a norm and allow one to measure deviations from it, thus enacting *normalizing judgement*, and they are the be all and end all of *examinations* in school. Foucault himself seems to allude to grades as a disciplinary tool when he writes:

Similarly [to the hospital], the school became a sort of apparatus of uninterrupted examination that duplicated along its entire length the operation of teaching. It became less a question of jousts in which pupils pitched their forces against one another and increasingly a perpetual comparison of each and all that made it possible to both measure and judge (1990, p. 186).

Arguably, grades are the single most used technology of discipline in the school and their power in this respect stems from their versatility. Even though Foucault writes mainly about punishment, he notes that this is only

one side of a 'double system' (1990, p. 180) which includes gratification as its flipside. He writes:

This mechanism with two elements makes possible a number of operations characteristic of disciplinary penalty. First, the definition of behaviour and performance on the basis of the two opposed values of good and evil; instead of the simple division of the prohibition, as practised in penal justice, we have a distribution between a positive pole and a negative pole; all behaviour falls in the field between good and bad marks, good and bad points. Moreover, it is possible to quantify this field and work out an arithmetical economy based on it. A penal accountancy, constantly brought up to date, makes it possible to obtain the punitive balance-sheet of each individual (1991, p. 126).

My fieldwork showed that what makes grades such a powerful vehicle for discipline, is that they can enact *both* gratification and punishment, unlike say detentions or prizes. By virtue of quantification, the grading scale encompasses the whole range of possible verdicts, which makes it possible to deter and reinforce using a single tool. In the following, I discuss the punitive and rewarding functions of grades in more detail.

Punishment and gratification

The most straightforward punitive or corrective use of grades is in response to academic performance. In the first instance, this punishment is enacted by the school. As was already discussed in [Chapter 6](#), the majority of students agreed that low grades and the resulting possible retentions were a just reaction towards educational 'failure' and that pupils needed marks to correct themselves. However, the punishment exercised through low grades extended to the home setting, where especially a great many of the young students faced a variety of bans, or worse, if they 'brought home' bad marks. Milad, for instance, routinely received several weeks of curfew and a mobile phone ban; others were not allowed to meet their friends, to use their Playstation, or watch TV. All of the children denied point blank that they were ever beaten for low grades, but there are good grounds to believe that this was not entirely true of all children. A Kurdish teacher at the school told me that some of the parents who came from countries with corporal punishment in schools often could not understand why he did not 'just flog' their child if need be. Mr Wegener too told me that he sometimes purposefully softened his criticism of individual students at the parents' consulting day for he suspected that some of them might be punished physically.

Besides bans and, possibly, beating, another common parental response to low grades was conscious or subconscious withdrawal of affection. In our first interview, the 20-year old Leila had told me that when, as a child, she had

to get her parents' signature on an exam that did not go well, her mother would say things such as 'This cannot be, you can't always be mediocre (*mit-teilmäßig*). When we touched upon her mothers' reaction in a later interview again, Leila specified:

I think the worst thing for a child is to see the disappointment in their parents' eyes. The first factor for me was always: I do not want to disappoint my parents. For me it was ... I didn't care too much about a 4 when I had gotten it ... if my parents had been OK with it. But it was just ... this look in their eyes and what they said, that was what hurt me the most.

Loris, a 14-year-old boy with Austrian-German parents described that him having good grades was something that was important to his father. When I asked him how he noticed that a particular mark did not quite please his father, he swallowed and then replied with an unusually high-pitched voice:

Mmh ... he then usually talks quite little. And then just says ... well ... 'the next one has to be better.' He ... isn't really mad, he's rather disappointed.

On the word 'disappointed' (*enttäuscht*), Loris suddenly exhibited a prominent speech impediment which I had never heard before.

Grades on the lower end of the spectrum not only punish school performance deemed insufficient, but also certain kinds of non-academic behaviour. The maths teacher in year five caused considerable anxiety among the children when he introduced a new method of regulating noise in class.

Upon many of the teachers' desks in the lower classes, there stood some kind of signalling device¹. In the year five classroom, this was a small metal tube suspended within a wooden frame and accompanied by a mallet. Jamil explained the new procedure to me in an interview, as usual with full physical engagement. We were sitting in a different classroom, which had a hotel-style bell standing on the teacher's desk. Jamil leapt up, darted to the front of the room and said:

Imagine this. This is our bell. Mr Bauer does like this [Jamil rings the bell]. Everyone has to be quiet. If he does it again [he rings the bell once more] he says 'We're writing a test next Tuesday or Wednesday.' *Always* like this. What if you don't revise?! [emphatically]. Maybe he'll take the *worst shit* out of the book that we've never seen before!

Here, the maths teacher clearly used the menace of a low grade resulting from an unannounced test to enforce silence and orderly conduct in class.

An interesting time frame in which to observe the punitive power of grades through its very absence was the final few weeks of school for the Q2. In April, the Q2 students had already received all of their final grades, except for those from the four pending central examinations. Put differently, out of their usually 11 teachers, only four still had the power to grade the Q2 students. During a biology lesson, Maria and her classmate talked about a project in the arts class that they both took. The teacher had asked them to paint a picture which they were not to keep but to give to the school to adorn the IT room. Maria had put much effort into her painting and was planning to keep it. She now prepared to break the news to her teacher after the lesson, but Kira was unsure. 'Watch out that she doesn't hate you,' she said. Maria laughed brightly and answered 'She may well do that, now that school is almost finished.' The German Abitur tradition even commemorates the students' freedom with a ritual called the 'motto week' (*Mottowoche*). In the final week of school before the students stay home to revise, again when all but four grades are fixed, the students violate most of the school's rules and regulations. Based on a daily motto, they come to school dressed inappropriately, for example in pyjamas or as 'antisocials' (*Assis*) with beach slides and Aldi carrier bags, and alcohol usually flows in copious amounts just outside the school premises. A graduation prank often ensures that the lessons of all other students are disrupted and the rite sees the more or less voluntary humiliation of teachers who have to partake in rap-battles or sack races in the school yard. Unfortunately, the motto week was cancelled during my fieldwork due to COVID-19 regulations and the students' great frustration about this underlined the importance of the occasion, when the punitive power of grades ceases.

Grades can also discipline students by *rewarding* academic performance and encouraging certain kinds of desirable behaviour. Concerning the former purpose, good marks constitute the primary means by which the school expresses acknowledgement and praise, and for most students, receiving a 1 was something that they dreamt of. Good marks are often accompanied by kind words from the teacher, sometimes publicly, or by other tokens of appreciation, such as hand-drawn smileys, written words of encouragement, or stickers on exam papers. High grades elicit strong feelings of accomplishment in students, as, for example, the 10-year-old Felix showed. He told me of a time when he had received a particularly good mark in primary school and how he had come home that day:

I came home and she [his mother] opened the door and said 'Which grade?' Then I told her the grade. I stormed in and I said the grade and then on my knees like this. *Uiiii*.

To illustrate what he did, Felix got up from his chair, ran a few steps and then slid through the classroom on his knees like a footballer who has scored the goal of the match.

That the rewarding function of grades extends into the home was also clear from the fact that many of the younger pupils received money for 1s and 2s, sometimes as much as €10 per mark – a rather astonishing sum given that some of these families did not have enough financial means to rent a locker for their child. Lena, 11 years old, vividly described how, in addition to remuneration, good grades secured her the attention of the whole family, including the side of her father who lived in a different federal state. Lena had recently received a 1 on a short English vocabulary test and when I asked her to explain how that had felt, she replied:

I was happy. I waited for school to be over so that I could show it to my mother straight away. Then I texted my father that I had a 1. He was also happy and told my stepmother. Then my stepmother told my granny and my granny was also happy.

Much like low grades, high grades are not limited to rewarding school performance but reinforce certain kinds of non-academic behaviour too. In a philosophy class, a pupil sarcastically complimented Mr Wegener, who was in his forties, that he looked like he was 28. Mr Wegener jokingly replied: 'Thank you, this is the path to a 1 in philosophy. Keep on it!' While the reply was of course not meant seriously, there was nevertheless some truth in it. Mr Becker, the headmaster, talked about a 'secret curriculum' which children learned to behave by. He added:

That continues until university [he laughs]. If I grasp what the one up front wants to hear, and know how to produce, reproduce that at the right moment, then I'll get a good grade. You get good grades for friendliness, you get good grades for conformity [he sighs].

Mrs Schröder told me, in a similar vein, that one could complete the Abitur with respectable marks if one had two out of three things: intelligence, politeness, or studiousness.

Two specifications on agency

Many of Foucault's observations on the disciplinary nature of the school are evidently salient and closely matched by empirical reality. Grading represents a, perhaps the, central technique in this context and serves to punish and reward not only educational outcomes but also certain kinds of behaviour more generally. Particularly the oral participation grade, the official name of which is 'grade for further participation' (*sonstige Mitarbeit*) is often informed by the pupil's conduct, beyond speaking up in class. Teachers frequently deduct points if students do not bring their materials to class, if they are routinely late, if they talk to their neighbour during class, if they talk back to the teacher, use foul language, or if they fail to provide parents' signatures on

exams. Foucault offers a systematisation of these punitive actions which was strongly supported by the ethnographic reality I observed. The only exception was the referenced area of sexuality which played no discernable role in my fieldsite:

The workshop, the school, the army were subject to a whole micro-penalty of time (lateness, absences, interruptions of tasks), of activity (inattention, negligence, lack of zeal), of behaviour (impoliteness, disobedience), of speech (idle chatter, insolence), of the body (incorrect attitudes, irregular gestures, lack of cleanliness), of sexuality (impurity, indecency) (1991, p. 125).

Despite the overall close fit between my ethnographic material and Foucauldian theory on discipline, two aspects, both concerning agency, require closer specification in order to represent the field fully. Firstly, in relation to disciplinary power, Foucault emphasises that it is not held and emitted by a clearly delineated centre, such as the sovereign previously. It is rather diffused throughout society, in the shape of a micro-physics of power (1990, p. 27). This is because

discipline may be identified neither with an institution nor with an apparatus; it is a type of power, a modality for its exercise, comprising a whole set of instruments, techniques, procedures, levels of application, targets; it is a “physics” or an “anatomy” of power, a technology (1990, p. 150).

Foucault writes about power as the actor, applying itself so to speak, for instance when he states that ‘it exerts pressure on them [those disciplined]’ (1990, p. 27). The absence of human agents is common in the secondary literature on Foucault too, where the Foucauldian notion of power is, for example, summarised as ‘a decentralised, substrateless operating’ (Bublitz 2020, p. 316, own translation).

This view was mirrored, to some extent, by my research participants. Students and teachers alike often referenced the ‘system’ when complaining about being subjected to grades or having to give them (see Chapter 8 for a closer analysis of ‘the system’). Grading and the power embodied by it were in these instances referred to as though ‘unmanned’. The same idea permeates lay discourses around numbers as a tool which somehow exists and unearths the truth, rather than being introduced by human agents, being used by them and serving specific interests. An ethnography of grading can help to paint a more nuanced picture. As was already shown above, many parents actively use grades to punish or reward. With regards to teachers, while there may be a large group who grade because they have to, there also exists a significant proportion who harness the disciplinary power inherent in them for their own purposes. What Mr Wegener coined ‘stone age pedagogy’ (‘I’ll give you a 5 if you keep doing that’) was still very much alive in the school. Mr Becker also

attested to the fact that teachers explicitly use, and sometimes abuse grading. In our very first encounter, the head teacher had told me that he disliked the self-righteousness with which some of the teachers sat in the staff room and marked exams. When asked to comment again on this in a later interview, he stated:

It is a position of power which one finds oneself in and teachers too are personalities which can be wounded in their pride (*kränkbar*). And I fear that on the level of grades, this power is played off. Tit-for-tat responses (*Retourkutschen*) are made. Let's say ... this happens sometimes ... a boy, year eight, maybe even with a Muslim family religion or family tradition, dares to be brash towards a young female teacher. Says insolent or inappropriate things. You could imagine that happening and then he'll just have to learn that that's not OK. But if this teacher experiences a personal affront, then she'll pay that child back. There is this type of embittered teacher, also of course older and male teachers, who fight back by giving the pupils low grades.

Mr Becker went on to criticise that, because of the civil service system, it was difficult to get those people off the job who may have started out as young and promising teachers but whose experiences had made them bitter, 'socially incompatible' and whose mercy the students were at. He wished that teachers had to periodically demonstrate their fitness for the job, like lorry drivers, so that those one or two colleagues whom 'the system' had made toxic, could be redirected to other professions. 'Then all the others who are at risk of becoming arbitrary would also hold themselves back,' Mr Becker concluded.

Apart from obscuring that disciplinary power is actively used, a second problem with Foucault's work is that it leaves open the question, on the other end, of the agency of those subjected to discipline. A commonly levelled criticism in the secondary literature is that Foucault seems to leave little space for the autonomy of the subject (see for example [Sarasin 2005](#), p. 176). The individuals being disciplined, all of us in Foucault's eyes, are little more than cogs in a machine, useful and docile bodies which contribute to the capitalist system. However, the students in my fieldsite to some small degree resisted being disciplined with grades and it is important to mention these in order to not unduly reinforce the picture of total passivity painted in *Discipline and Punish*.

The most obvious mode of resistance against the school's grading regime is non-compliance. In short, it consists in not engaging in the kinds of actions or behaviour which would result in good grades, and/or conversely in engaging in those which lead to bad grades. Non-compliance was certainly observable throughout my time in the field. Students chatter in class, they talk back to teachers, they do not bring their materials or gym clothes, they do not revise, they do not do their homework, they shout answers without

raising their hand, they come late to class or they skip lessons. The reasons for why a student displays non-compliance are manifold, complex, and above all highly personal. Some pupils revolt against particular teachers, others cannot motivate themselves, some are too shy to participate in class, while others cannot contain their energy. Some students do not manage to break through bad habits, others test their limits or have difficulty accepting authority. Some want to play it cool before their peers and still others have lost all hope that their efforts will ever pay off. The reason which teachers cited the most for defiant behaviour was the one which I did not encounter in the school: simply not caring. As was already discussed in [Chapter 6](#), all of the students whom I engaged with, convincingly professed in our interviews and informal conversations that they wished for good grades and argued that they needed to continuously strain themselves (*anstrengen*) in order to achieve them.

An additional important finding was that while many shades of non-compliance existed and some students had already entered a downward spiral of low grades and growing refusal, I did not meet a student who completely resisted the threat of 5s and 6s and would totally disregard the rules of school. Such students certainly exist. In German, they are sometimes labelled ‘system blasters’ (*Systemsprenger*) and their trajectory would be an intriguing research topic in itself. However, it is clear that these pupils are rather rare in relation to the whole student population. One of the primary reasons for this is certainly that the full force of the school as a disciplinary regime comes down on those who do not cooperate, and the students know this all too well. From extra tasks to signatures on exams, from Foucauldian miniature models of the court such as the consulting day and parent day, from detentions to retentions, and ultimately to expulsion – the school has a wide range of instruments at its disposal to deal with students who refuse to adapt even in the face of abysmally low grades. This disciplinary power extends beyond the school context, for grades are heavily institutionalised. It is in this capacity that Becker et al., in their work on the GPA perspective (1968), liken them to a currency. Much like money, ignoring grades altogether is hardly possible, for if you do, it has tangible repercussions (1968, p. 56). In the extreme case, not caring at all about money or grades has the same consequences: exclusion from the job market, social debarment and as a result highly precarious living conditions. Total non-compliance is thus something which most pupils do not consider, especially as they get older. As the 19-year-old Dustin said in an interview: ‘I just realised that in the Q2 it’s of no use to take on the teacher. Just do what she really wants.’ While grades can hardly be disregarded, the things which they are supposed to measure are less institutionalised and thus can be neglected more safely: scholarship, intellectual growth, truth, learning for oneself (Becker et al. 1968, p. 56). Resulting from this imbalance, a common strategy of soft resistance is gaming.

Goodhart’s Law, made famous in anthropology by Marilyn Strathern’s work on audit (1997) states that the more important a metric becomes, the more it gets gamed out of usefulness. This was true of grades in my fieldsite.

Rather than subject themselves completely to the academic demands placed on them by the imperative to get good grades, students sought ways to receive favourable results in less effortful ways. The 18-year-old Malte, for example, had over the course of his 13 years of school, developed at least three strategies. His professed aim was to make sure that his grades did not drop too much but he also did not strive for excellence. Maximum output with minimal input was his agenda. In order to achieve this, he had firstly tried to learn to 'read' teachers. He told me that he had selected his Abitur courses based on who taught them and which of the teachers seemed to take to him. Moreover, Malte always sounded out what his teachers liked – whether they were the ones you could joke with, or those who were allergic to chattering, and so forth. Based on his assessment of 'What do I have to do to get my grade?' Malte adapted his behaviour and thought he fared rather well with this approach. 'It doesn't always pan out, one has to say. But most of the time,' he concluded. Malte's second gaming strategy was to invest just enough time into his revision to get his desired result, a 2 or a 3, but never so much that it would impinge seriously on his free time. His revision approach was to start two or three days before the exam and then cram for six or seven hours on end. While Malte described his technique as 'not very sustainable', it nevertheless proved effective in getting what he wanted; results in the area of what he called 'healthy mediocrity' (*gesundes Mittelmaß*). In relation to his parents, Malte had developed a third gaming strategy. Being over 18, he now hardly disclosed his results to his parents anymore, but when he had still needed to get signatures, he had made sure to mix good results with bad ones so that he could 'always somehow explain it. And then blame it on a temporary slip up.' Taken together, Malte's tactics allowed him to somewhat duck the disciplinary power of grades without eliciting the institutional and parental push-back that non-compliance usually provokes.

So far in this chapter, I have aimed to illustrate the general applicability of Foucauldian discipline to grades. I have argued that it is their quantificational nature which allows grades to represent the whole spectrum from 'good' to 'bad' and that this makes marks such a powerful, versatile, and lean disciplinary tool which can both punish and reward. In two respects, which are of importance for quantification more broadly, my ethnographic insights departed from Foucault's theory. Firstly, the power of quantifying students is not just one which circulates through a network, unclaimed, but is also actively used, in this case by teachers and parents. The same is true of most metrics and indicators and this fact should not be overlooked simply because quantification seems such an ownerless, 'neutral' technique (Miller 2001) committed only to representing the truth. Secondly, I have shown that the individuals in a quantificational disciplinary regime are not entirely powerless. They draw upon non-compliance and gaming, even if their options are restricted when a given indicator is as institutionalised as grades are.

In the remainder of this chapter, I seek to deepen the analysis by investigating an issue which is material for Foucault – in the true sense of the

word – and yet often missed in scholarly work on both grades and quantification. This is the body.

The corporeality of being graded

Foucault's interest in the body represents a constant throughout his oeuvre. For an ethnography of being graded, his writings on discipline are the most relevant since it is here that Foucault details how the anatomical-biological body of the individual is the target of power in a disciplinary institution such as the school. In *Discipline and Punish*, Foucault describes in historical succession three *dispositifs* (apparatuses) of power, and their respective influence on the bodies of those subjected to it. Sovereign power, and this constitutes the disturbing first few pages of the book, is expressed by torture. The sovereign demonstrates their power by destroying the body of the condemned dissident in a public spectacle. Following the blood and gore is the reformer's technology of the scaffold. Punishment is here understood as directed against the juridical subject and takes life with minimal contact to the body. In the finally victorious *dispositif*, that of discipline, Foucault stresses, it is still 'the body which is at issue – the body and its forces, their utility and their docility, their distribution and their submission' (1990, p. 25). Disciplinary power however, although retaining some violent means of older times in certain contexts (1990, p. 16), does not seek to rip apart and thus terminate the body. Rather, it punishes by correcting and seeks to fabricate docile, useful bodies which are fit for work. The tools which disciplinary power uses often appear more 'lenient' (1990, p. 25) and include surveillance, repeated exercises, regulations of movement and the training or conditioning towards certain signals (1990, p. 166). Much like Foucault argues, many of these techniques directed at the body can be found in the school. In everyday school life, the bodily behaviour of students is strictly regulated. The already mentioned limited use of toilets is but one example. Students are to stay put at their desks during class, they have to stand up once the teacher arrives, they have to raise their hands to answer a question, and physical fighting is strictly forbidden. Especially under the rule of COVID-19 hygiene regulations, the school's hold on the student body in its totality became glaringly obvious. The 'dressage' which achieved an ordered routine of mask wearing, hand washing, distancing, and ritualised twice-weekly testing would in itself merit a chapter.

In the following, however, I focus on how *grades* affect the body in a disciplinary setting. A second aim which I hope to achieve with my material is to detail the internal perspective of being disciplined with numbers. Foucault often stresses that it is the 'inner' which is central to discipline, for example when he writes: 'The expiation that once rained down upon the body must be replaced by a punishment that acts in depth on the heart, the thoughts, the will, the inclinations' (1990, p. 16). Despite this conviction, Foucault's methodology of historical analysis entails that he is largely

concerned with the external outcomes of discipline. That is to say, what we see are docile bodies in action and what is largely missing is an account of the lived experience of a type of power which is supposed to target the internal. In the following, I investigate what it feels like, literally, to be disciplined through grades.

Observing the corporal

That grades have a visceral effect on students was something that became clear early on in the field. One type of situation where this was apparent was when students had to account for their marks before a 'mini-court' such as in the introductory vignette. Jessica was not the only pupil to exhibit a noticeable reaction. Following her consultation session were several others, mostly without parents. Dennis kept on his thick padded winter jacket almost like a suit of armour and incessantly fumbled about with its zipper with trembling hands. Jamil entered the room, his back extremely crouched as if he was expecting to be hurt physically and, somewhat to the bemusement of those present, shook all of our hands at the start. Nasir was paler than usual and he too did not take off his anorak. Because the rather enormous hood on his head, with its expansive fur trimming, almost made his face disappear, Mr Bauer eventually asked Nasir to take the jacket off. His whole body was shaking violently, prompting the teacher to ask 'Are you afraid?' Nasir mumbled something and looked down at his quivering hands which were covered in blue ink from having fidgeted with his fountain pen. When he finally left the room, Nasir also had a big blue streak across his forehead.

This kind of bodily reaction was certainly not limited to the younger pupils. In the Q2 biology class, I had the opportunity to sit in on the announcements of the oral grades, which were conducted with each student individually in a storage room next to the classroom. The 20-year-old Leila came in, addressed me with a wry smile and then sat down on a chair between Mr Bilke and me. She pulled her shoulders up immediately, wrung her hands in her lap and constantly kept her gaze down towards her dazzlingly white Nikes, the soles of which she kept pressed firmly together. 'Are you really scared right now? You look like it.' Mr Bilke asked. 'Yes,' Leila replied plainly. 'It might be because there's two of us sitting here,' Mr Bilke mused, referring to himself and me. Leila did not reply. For Jarek, with his characteristically assiduous nature, being graded was something that affected his body long before and long after marks were issued. In one of our interviews, he said:

In school it's just that I have a permanent feeling of being judged. I am being judged for how I sit, for how I did my homework. I am being judged for my handwriting. I am being judged for what I say and how often I say something. And as a result of that, one constantly undergoes a kind of self-control in one's daily life, also

outside of school. One thinks 'Oh my God. How would someone judge me now?'

However, by far the most common situation in which the student body reacts visibly towards grades is at the time when they are given. Throughout my fieldwork, I observed countless lessons in which exams were handed back. I rarely had the chance to notice everything that went on when 20-odd students anxiously waited, cheered, cried, or buried their face in their arms. In order to gain a finer understanding of how students felt in these moments of intense contact with school marks, I made them a central topic in all of my interviews. Two techniques, which I used with the youngest students, proved particularly powerful.

The die is cast

A die shows the numbers 1 to 6 which conveniently correspond to the German grading scale and made the item an ideal device for my interviews. Towards the end of my conversations with the 10 to 11 year olds, when, I hoped, the atmosphere was one of trust and familiarity, I asked them to simply roll the die repeatedly and to tell me what they would think if the result were their grade in an English exam. I had intended this task to be just that – a prompt to talk about how one feels about a particular mark. What I had not anticipated was the strong bodily and emotional response to the numbers on the die. As I was audio recording the interviews, I was able to observe the pupil's reactions in detail. Jessica's interview was remarkable insofar as she rolled a 6 and a 1 in direct succession. In response to the 6, Jessica said nothing at all at first. 'What would you think about a 6?' I asked. With an unusually high and thin voice, she replied 'I'd be mega mad.' 'Mad at what?' 'That I have a bad grade.' 'And what would you do then?' Jessica had now dragged her shoulders up towards her ears and she was evidently holding her breath. With a staccato, she replied 'Be sad. Angry. If I could, I'd run away.' 'Where to?' 'Anywhere. To a tree or so. Let out my anger.' 'And what would it be like at home?' 'Mad. Trouble,' Jessica answered and when she breathed out, it was with a clearly audible tremble. Watching Jessica's distress in these few moments became unbearable for me too, so I urged her to roll the die again. A 1 came up. 'A 1, what would you think?' I prompted her. Jessica's voice was now babylike when she answered with an awed whisper 'Then I'm happy.' A wide smile sprawled across her face and she added 'I'd leap into the air with joy.' 'And what would it be like at home?' Jessica gave a clear and ringing laugh and said joyfully 'She'd just be *glaaad* and think "Yes, she did it. She can do it!"'

Omar also displayed a striking reaction to the task, for he could hardly talk about his feelings towards a 6, 5, or 4. In response to my questions, he kept his head lowered, lips sealed and silently drew unhappy and disappointed looking smiles. When I asked him if he could explain his drawings, he only answered

with condensed statements such as ‘be a little scared’ or ‘trouble’. When Omar later rolled a 1, he drew a smiley face whose wide smile almost touched the top of its head – mirroring his own beaming expression in that moment. In his typical hoarse voice he said ‘I’d be happy. I’d get €10. Better than curfew.’ With an open and talkative air, he added ‘*Aaand*, I can go to town with my friend or so.’

Another intriguing candidate in the task was Valentin. I have reproduced excerpts of the exchange below, leaving out sections where he talked at length about other things, such as his parents’ reaction.

Interviewer: [explains task]

Valentin: [takes the die and laughs a little] I bet it will be a 6 or 5.

[He rolls the die, a 3 comes up]

V: [in a resigned tone] A 3.

I: What would you think about that?

V: [he sighs] Um ... bad. Because my mother ... doesn’t like 3s and 3s are just like 4s and 5s to her. Because she was born in Kazakhstan and her grades were different. She didn’t have a 6 or 1. [...]

I: OK, let’s roll again.

[A 3 comes up once more.]

V: [upset and bitter] Oh no, come on! I *said* it, I’m a 3!

I: That’s not true. You’re not a 3. Honestly, you’re good, you’re clever.

[Valentin sits there stark and stiff and refuses to touch the die again.]

I: Come on, let’s continue. I’m sure you’ll get something really good.

[Valentin snatches up the die with a frustrated expression and rolls it. A 5 comes up. He looks as if he is about to cry.]

I: [laughs] Let’s just take it. We’ll get those ones out of the way and then we’ll have the good ones left. What would you think about a 5?

V: The same just worse [...] You don’t want to go home when you have a bad grade. Just be somewhere else and *not* home [...]

[After another 3 and a 5, a 1 finally comes up. I ask Valentin what he would think.]

V: [with a breezy and melodious voice and a dreamy expression] Yes, that’s *really* nice. Having a 1 is *really* nice. Because ... if you have a 1 then you just feel ... free. And you don’t have to be afraid and you might even get something.

If the rolling-a-die-task showed anything, it was the truly astonishing extent to which my interlocutors showed conditioned corporal and emotional responses to certain numbers, after just three years of – albeit incessant – grading between the ages of 9 and 11. A simple thought experiment and the mere sight of a few dots on a die were enough to elicit strong bodily reactions in almost all of the children. The idea of receiving a 5 or 6 made them whisper or refuse to speak, it made them swallow hard or almost cry. When rolling a 1 or 2, however, their faces lit up. The students smiled, laughed even, and their voices changed. It was as if the clouds had been pushed away and dazzling rays of sun were shining into the classroom. The pupils described their bliss in a way that suggested that they were not just drawing on memories, but were experiencing it in that very moment.

What it feels like

So far, I have concentrated on the observable corporal response of pupils to grades: in class, in tribunal situations and in the rolling-a-die-task. For the remainder of this chapter, I adjust the focus to the students' inside perspective – the carnal dimension of what it means to be graded, as described in their own words. The draw-a-picture-task which I conducted with the young students created particularly helpful insights into this question. I gave the children the following prompt:

Imagine you are sitting here at your desk in class, when your English teacher comes in. She has her arms full with stacks of paper and says: "I have corrected your English exams and you will get them back today." Could you draw and explain how you feel in that moment?

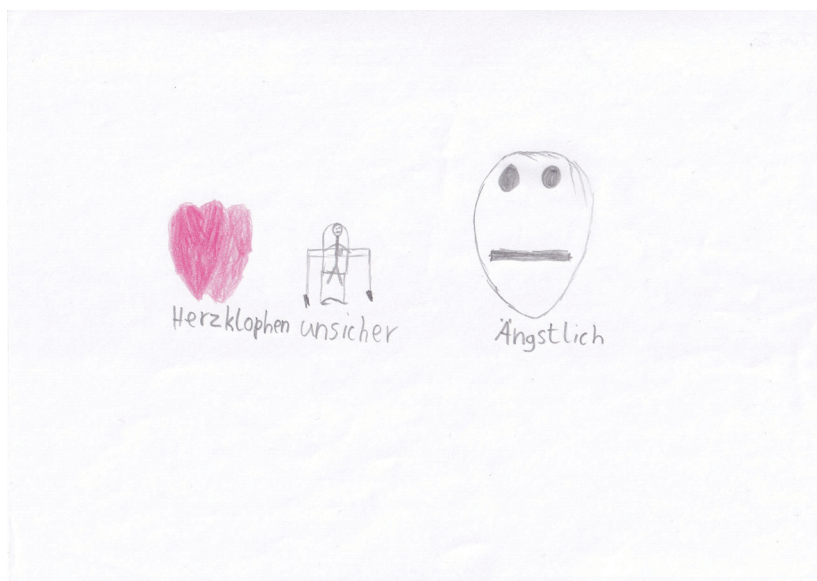
Even though I collected a wealth of arresting images this way, in the following, I have limited myself to some of those where the student explicitly referred to their body.

The 10-year-old Felix was the youngest and smallest child in his class and looked very much like a primary school pupil. He had a guileless and happy nature which was underlined by his high, joyous voice. When he described his picture (see [Figure 7.1](#)), he spoke in an even higher, but now almost pleading tone.

I feel really insecure. Anxious. Well ... I'm then also... so nervous. I want to try to laugh but then I'm scared to get a bad grade. I feel so... racing. As if my heart beats really fast, like with hyper speed. And then run away quickly. I'm just really scared. My heart beats and beats and I'm thinking "Will my heart fly away now?"

The heart was by far the most referenced body part and it also featured prominently in Jamil's description of his drawing (see [Figure 7.2](#)), while he was completing it.

Figure 7.1. Felix's drawing



Notes: Below the items he has written from left to right 'heartbeating', 'insecure', 'anxious'. The second item shows him sitting at his desk in class.

Jamil: How can I say ... well I feel anxious. I feel anxious and a little angry.

Interviewer: Interesting, why?

Jamil: Because of getting in trouble. I'm imagining now that um ... face ... oh I'm getting fear, I'm getting panic [...] I'm feeling very anxious. And angry because of the punishment. My heart beats two hundred times per second, honestly.

Even though her picture was rather unassuming (see [Figure 7.3](#)), Nayla's explanation of it was quite evocative and again mentioned the heart.

I would look like this because I can't see if it [the exam] is good or not. I have to wait until I get my exam back. It feels as if ... as if ... one was just ... well it gets really warm. One feels very warm. As if one was in a sauna, one is also sweating a little. With me, it feels as if there was a stone on my heart. Sometimes I get really red, too.

Valentin had some difficulty with the drawing task. He said that he felt scared when waiting for the exam but that one could not draw fear. Instead, he wrote the word 'Angst' in the top right corner of his sheet of paper (see [Figure 7.4](#)).

Figure 7.2. Jamil's drawing

Note: In the lower left corner he has written '200 times sec'. Below the drawings from top to bottom he has written 'panic/angst' and 'angry'.

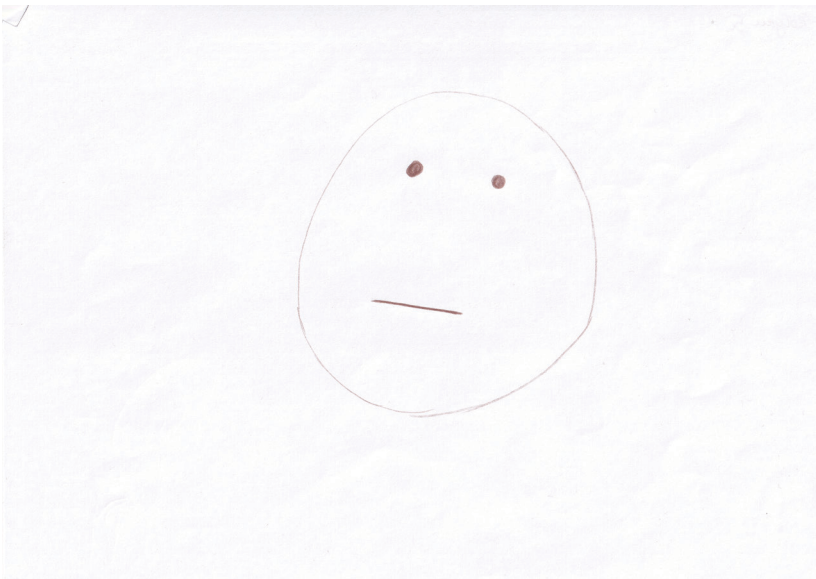
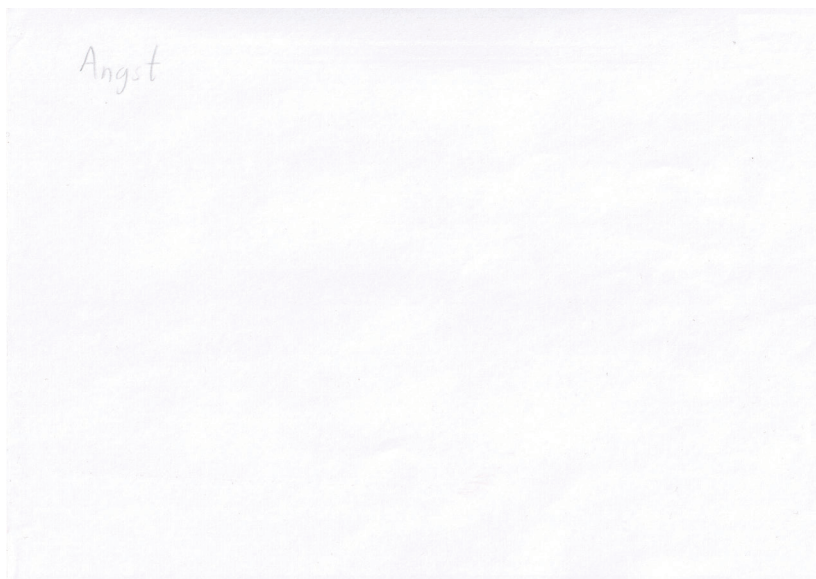
Figure 7.3. Nayla's drawing

Figure 7.4. Valentin's drawing



Valentin's interview was nevertheless one of the richest in references to the bodily effects of grades. When I asked the boy if he could maybe draw his facial expression whilst waiting for the exam, the following exchange ensued:

- Valentin: Mmh ... no. Because I always have a normal facial expression so that I come across as normal. I sit there like this [he shows a blank expression] as if nothing is ... being done. And as if I'm just listening.
- Interviewer: And why do you do that?
- Valentin: Because otherwise I'll come across as stupid again, like I'm scared and. Yes.

The importance of keeping one's body under control, to make it look 'normal', so as to not betray one's feelings, was perhaps also what Felix referenced when he said that he always wanted to 'try to laugh' in the situation.

At a different point in the interview, I asked Valentin how he would feel about getting a 6.

- Valentin: [in a toneless voice] I am dead.
- Interviewer: Really?
- V: Yes.
- I: That's how it feels?
- V: Yes.

- I: That sounds awful. And how does it feel in your body?
 V: It feels *really* ... it *really* hurts.
 I: And where?
 V: Everywhere.
 I: Oh dear.
 V: Mostly in the heart. If you see that, 6 ... then. Mm-mm, no [he slowly shakes his head]
 I: Nothing goes anymore?

[Valentin shakes his head again]

- I: What would you do in such a situation?
 V: [after a long pause] I'd rather die.

Valentin too singled out the heart as the part of an overall pained body in which grades are felt the most. What is more, he linked the lowest grade to the end of corporal life by stating that he would rather die. While this may seem rather drastic, Valentin was in fact not the only student to argue along these lines. Jessica, for instance, said a similar thing. In the picture-association task, she chose two images: one of a destroyed shop window of a jeweller's and one of bloodstains in a sink, by far the most graphic image in the collection. About why she had chosen the images respectively, she stated: 'because I ... it will be broken. Because I often think I'm broken because I can't do it' and 'Because I often wish I was dead because I can't do it'.

Finally, when I asked Valentin how he would feel if grades no longer existed, he answered with one of his favourite words: 'free'. 'Does this mean that you usually feel unfree?' I asked. 'Yes,' Valentin replied. 'When I go to school and write exams, then I feel uncomfortable. And when I feel uncomfortable, I don't feel free.' His voice became nasal and breathy and he added 'Then I feel like I'm a robot and have to do all that.' His eyes were now bright red. Valentin's description of feeling 'robotic' in ordinary school life not only mirrored closely the Foucauldian notion of disciplined, efficiently operating bodies (Foucault 1991, p. 98), but also seemed to resemble Jarek's description of feeling that he constantly had to control and constrict his body in what he perceived as an incessant judgement process.

My other interlocutors too cited a wide range of additional somatic effects of being graded. Mehmet said that he would be sweating and needing to pee, Lena said she often found herself shaking and Dennis talked about the cold sweat dripping from his forehead in his drawing and fittingly labelled it with the neologisms 'startled tears' (*erstaunte Tränen*) and 'thought sweating' (*Gedankenschwitzen*). These students' drawings are reproduced in Appendix B, Figures B.1 and B.2, respectively. I did not make the older students draw pictures, as it might have seemed belittling, but instead showed those of the year five pupils to them. The vast majority of students from year nine and the Q2 said that they recognised the bodily feelings described, and most of them

professed to having them to this day. The 14-year-old Daniel added his own evocative description of what it is like to wait for a graded exam. ‘It’s like having a Center Shock in your mouth,’ he said, referring to a well-known type of bubble gum with an almost unbearably sour core.

Even the head teacher Mr Becker, aged around 60, remembered the kind of situation vividly. As he said:

I know this from my own school time. This cruelty (he laughs) when the teacher ... The worst thing was when they worked their way down from the top (he breaks into a hearty laugh). First they gave back the best exam, then the second best, and I still didn’t have mine. Now we’ve reached the 4s and the teacher still has my exercise book. Such agony!

Discussion – on the source of terror

In Foucault’s writings on disciplinary power, the role of the body is not straight forward. On the one hand, Foucault describes in-depth how discipline aims at the individual body, subjects it and crafts it to function in the desired way. On the other hand, he writes of the now ‘non-corporal’ (1991, p. 20) nature of punishment. He notes about the shift from torture to discipline that ‘the old partners of the spectacle of punishment, the body and the blood, gave way [...] The apparatus of punitive justice must now bite in this bodiless reality’ (1991, p. 25). That discipline should at once target the body and yet not target it, is clearly contradictory. One way of solving the puzzle is to introduce a distinction between exterior and interior corporality. John Protevi argues that while torture acted upon the surface of disobedient bodies, discipline seeks to act on them from the inside (2014, p. 52). This is the widely known idea that, in discipline, power inscribes itself into the body, rather than destroying it from the outside. My ethnographic work on being graded supports this idea for it showed that grades enact ‘a power that seems all the less “corporal” in that it is more subtly “physical”’ (1990, p. 177). Grades bring forward strong somatic responses in students, without ever touching them.

In *Discipline and Punish*, Foucault describes that there was often significant disruption of public executions, the onlookers demanding its end, or seizing the condemned from the hands of the judge (1991, p. 69). A similar revolt against the effectuation of disciplinary power seems unlikely. Grading, in particular, enjoys overwhelming public support (Herdegen 2008, p. 8) and watching someone receive a grade hardly elicits spontaneous responses of outrage. Protevi convincingly argues that ‘the terror of the spectators [of an execution] rests on a bodily sympathy, a sharing of the pain of the victim’ (2014, p. 53) and that it is this very sympathy which could spark the upheaval which the reformers thought to avoid with the introduction of the scaffold and by hiding away executions. An emphatic response, feeling with those who are graded, is difficult to develop under ordinary circumstances. There is firstly the powerful

fact that school marks do not visibly wound the student body. Secondly, like most disciplinary action, grading takes place behind closed doors, in a designated institution. When pupils receive grades, they are away from their parents, and of course from a general public. Thirdly, noticing the at times rather subtle outward reactions of students to being graded requires heightened attention to the individual. Quivering, paleness, or changes in voice and posture often go unnoticed with teachers and fellow students. This is partly because, fourthly, grades are usually issued en masse, each student receiving their result at the same time. It is quite impossible for teachers to pick up on the subtleties of somatic responses of 20 plus students at once – and each of them is too busy with their own marks to observe how their peers are doing. Fifthly, even when teachers have the opportunity to observe individual reactions, such as when discussing oral participation grades, they are frequently overlooked for the fact that they are so very common in the education context. Subsuming the bodily reactions under well-known headers such as ‘nervousness’ makes the strange familiar and somewhat removes the student’s experience from the realm of sustained compassion. An ethnography of being graded helps to better understand and feel with those on the receiving end. When listening closely to those who are still living in a grading regime, unlike most of us, it becomes clear that school marks are far from non-corporal and that discipline in school retained a distinctly physical dimension even after the abolishment of corporal punishment. The students’ pains and discomforts can help appreciate this fact and can foster the bodily sympathy which onlookers of discipline mostly lack.

The results of this chapter also have implications beyond grading and for quantification more generally. The visceral dimension of being quantified is one grossly neglected issue in the relevant literature. In fact, many authors seem to believe that quantification is above all a cognitive instrument which works on the ‘minds’ of those subjected to it. Vormbusch, for instance, in *The Rule of Numbers*, very much illustrates his own approach to calculative practices in human resource management when he sums up Hoskin and Macve’s work on grading:

[...] they highlight [...] in contrast to Foucault not the aspect of an institutionalised dressage of the bodies into which power is inscribed, but the aspect of *cognition*, that is the subjectivation of humans powered by competitive relations’ (2012, p. 112, own translation and emphasis).

For Vormbusch too, human resource management draws on grids, portfolios and key figures so that employees be put into competitive relations with one another to elicit constant self-optimisation (2012, pp. 25–26). The body of the quantified plays no further role. This underlying conception of quantification as a merely intellectual, cognitive instrument, often tacitly assumed in the quantification literature, does not hold up to scrutiny. First of all, it

is worth remembering that quantification in its origins used to be much an embodied technique; historically speaking, but also for each of us individually. The human body with its discrete parts such as fingers and toes, forms the basis of most counting systems worldwide, as is reflected in their base numbers such as 5, 10, or 20 (Barrow 1992, pp. 45–51). Quantifying was, then, once a somatic experience. *Being* quantified is to this day, as the lived experience of receiving school marks clearly throws into relief.

Having made a case for the visceral dimension of quantification, I now do turn my attention to its cognitive and epistemic nature in Chapter 8. I investigate the status which numbers enjoy in the pursuit of knowledge and what this means for other sources of information. In particular, my focus is on how student testimony and grades figure, respectively, in the distribution of credibility both within and beyond the school.

Note

- ¹ There is an interesting passage in *Discipline and Punish*, in which Foucault writes about the importance of signals in a disciplinary regime. He argues that those subjected to power must be made to react to a ‘precise system of command’ (1990, p. 166), a set of short codes which the individual need not comprehend but follow. The bell on the teacher’s desk clearly fulfils this role but it would be intriguing to research whether grades themselves do not represent a system of signals, ‘whose efficacy rests on brevity and clarity’ (1990).

8. *'She can make you into a tramp'* – Testimonial injustice against the bearers of numbers

The very first day of my fieldwork was at the same time the very last day of school before the summer holidays. Mr Becker had offered me to come along to the final teacher conference of the school year and the subsequent barbecue to socialise with the teachers ahead of my official start in the upcoming year. With exhaustion written across his face, Mr Becker had said that he would briefly introduce me to those present but he had also asked me not to present my project in detail just then. He had sighed and said 'On this day, I don't want any discussion with the teachers. It's just meant to be a *nice* occasion.'

The auditorium where the conference took place was a large round room with wooden flooring, a stage at one end and a high, pointed ceiling almost like a teepee. In the middle of the room, a small glittering disco ball was suspended, reminiscent of the numerous festivities usually taking place here. The curved rows of chairs before the stage offered enough room for the approximately 120 teachers filling the auditorium on that unusually chilly afternoon in July. The atmosphere seemed joyous and relaxed and it felt as if the anticipation of the summer holidays was almost palpable despite the weather. I settled next to an IT and maths teacher who had approached me when I had been standing alone and without orientation at the school entrance. During the course of the conference, I was surprised by how many technical and organisational issues were still on the agenda: how to order school books for the new year, the annual statistics on overtime, how to access a help file on what to do in the event of a school shooting, and the case of an electric kettle which had vanished from the staff kitchen. 'Disgrace!' a person had shouted behind me before it became clear that someone had simply stored the item in a cupboard under the sink.

At some point, Mr Becker mentioned my presence and explained that I was conducting research on grading, and that I would introduce my project in the next conference. I waved silently from my seat. Then the festive part of the conference began with the farewells to former colleagues. Some were moving to other cities, others had been promoted at a different school and some had reached their retirement. Large groups of teachers gathered on the stage bearing gifts and delivered touching speeches of praise, thanking their colleagues for their commitment to the school and its students. Some tears were shed

and several flower bouquets changed hands. The last teacher to be seen off into retirement was a white-haired lady in her sixties called Sabine. One of the male teachers asked her onto the stage next to him for his speech. Sabine went up the few steps, dressed in a wide blue linen dress and a necklace with large wooden beads, clasped her hands before her body and looked somewhat lost on the big stage while her colleague began his speech. 'Here at this school, we have always been special so it's hard to believe that it has taken so long to be sent an anthropologist,' he laughed and nodded in my direction. 'You, Sabine, have given so much to this school in the past almost two decades that I do not know where to begin.' He went on to say that two anecdotes about Sabine's time at the school had particularly stuck with him, and he embarked on retelling the first one. 'You once had an official complaint by a student who had felt inappropriately harshly judged in two of his grades. It was one of the very few complaints we have ever had at this school.' A murmur arose from the rows of chairs, the IT teacher next to me stopped fidgeting and it seemed as if half of the audience was holding their breath. Sabine too looked somewhat taken aback by the unusual choice of topic for a tribute speech. 'The school authority from the district government assessed everything: notes, exams, homework. The result ...' the speaker made an artistic pause before he resumed, 'one of the grades was confirmed, the other one was corrected downwards.' The crowd instantly erupted in laughter, deep triumphant belly laughs mingling with giggles and amused snorts. Even I found myself grinning despite myself as a result of the contagious and explosive comic relief of previous tension. Solely Sabine up on the stage showed but a faint smile.

Sources of knowledge and the epistemic status of quantification

Trying to make sense of the world and the people within it is an integral feature of being human. From earliest childhood, our actions are driven by the need to understand, to grasp – quite literally. Indeed, first-hand experience as relayed by the senses constitutes a vital source of insight throughout our lives and contributes to an ever-growing mental archive of memories. However, we also draw on other means to gain knowledge. Often times we rely on other people's say-so – especially if they are 'experts' – and we build our world view on facts which have become so widely accepted that they no longer have a discernable author. Increasingly, it seems, people are also turning towards numbers for answers – a development epitomised for instance in the emergence and rapid growth of data journalism ([Houston 2019](#)).

In this chapter, I explore how quantification figures in the quest for knowledge, and the kind of epistemic status it enjoys. The modern school sets great store by numbers. In the field, grades were usually handled as irrefutable facts, which made it difficult for students to criticise or even appeal them. Students frequently experienced what the philosopher Miranda Fricker terms

‘testimonial injustice’, that is a systematic devaluation of their word. The most widespread reaction to this epistemic climate was a sense of powerlessness, of being at the mercy of ‘the system’. Some pupils, however, chose a strategy of complete adaption to the demands of a kind of education which prioritises numbers over other potential sources of knowledge.

Epistemology is the branch of philosophy devoted to the study of knowledge. Attempts to define the latter concept, by stipulating a range of conditions for a mental attitude to classify as knowledge, had long been a central concern for epistemologists. The most widely accepted definition of knowledge, with an extensive historical past, had been that of justified true belief (JTB), before Edmund Gettier published a legendary short article (1963), whose counterexamples made the JTB analysis collapse. In the following 30 years or so, a wide range of new concepts of knowledge was developed, and a lively game of definition and subsequent counterexamples ensued. The rather humbling result of millennia of philosophical ambition to define knowledge is that the quest was abandoned more and more since the 1990s. Timothy Williamson (2002) famously argued for a ‘knowledge first’ epistemology, which takes its departure from that very concept and defines other epistemological notions such as belief or justification on its basis.

Apart from the definition of knowledge, analysing its *sources* has always been the stock-in-trade of epistemologists. The discussion had long been heavily skewed towards perception and memory as prime candidates – an approach epitomised in Descartes’ meditations. Moreover, in a contribution from the philosophy of science, (scientific) facts had also been acknowledged as a form of evidence and thus a key source of knowledge. Somewhat ironically, it was the example of science which, however, led to a seismic shift in more recent Western epistemology. In his 1991 paper, Hardwig convincingly argued that natural science and mathematics, arguably the strongholds of self-evidential facts, are largely based on trust. Colleagues have to take each other’s word in a context of hyper-specialisation and have to build upon results which they themselves have no means of verifying. Hardwig calls this a ‘division of cognitive labour’ (1991, p. 695). He claims that trust is also central to the peer-review process, for there are often too few suitable referees for a given specialist paper and ‘internally consistent and plausible fabrication’ (1991, p. 703) can often not be detected. In the years to follow, epistemologists therefore increasingly discussed an additional source of knowledge which had previously been dismissed: testimony. A whole new branch of study was founded upon the premise that knowledge acquisition is rarely the exercise of solipsism and individualistic self-reliance that Descartes would have us think – rather, it is above all a shared, social activity. Social epistemology emerged in the 1990s and now constitutes a dynamic field of philosophical endeavour. The importance of testimony for knowledge continues to be a central concern.

How quantification and numbers fit into the discussion about sources of knowledge begs a straightforward answer. Some numbers can clearly be

thought of as facts, such as when you read a well-working thermostat which shows you that it is currently 21° Celsius. Other numbers are without a doubt informed only by subjective evaluation, such as when Donald Trump infamously stated that Heidi Klum was ‘no longer a 10’ (Zaru 2017). This then constitutes testimony, albeit of a very informal kind, expressed in numerical form. Most types of quantification are harder to place. Take, for instance, the IQ score or a university ranking. It appears that there is some measurement involved, rather than mere subjective evaluation, but it is questionable whether the results are facts. Firstly, it is uncertain that what is being measured is what the metric *purports* to measure. Moreover, just how the metric was designed is the result of human, subjective decisions about what ‘counts’ and even the notion of measurement as a fully objective description is contested (Mari 2003). Thus with many numbers it is not easy to ascertain what kind of a source of knowledge they are because they seem to fit neither into the category of facts nor of testimony.

Regardless of the difficulty to classify quantification, previous works have, however, unearthed several valuable insights into its epistemic *reputation*. In other words, these writings from the field of quantification studies help us to better understand the kind of status that quantification enjoys. The results can be, I take it, distilled into two attitudes which people often adopt towards quantification and its products¹. Firstly, there is what I call the ‘numbers as facts’ attitude, which takes centre stage in most of the quantification literature. Across the case studies currently at our disposal, there is strong empirical support for the phenomenon that numbers, and other products of quantification, are often taken at face value. They are perceived as non-controversial facts which offer a reliable representation of the truth and thus lead to knowledge. An example could be the student who chooses their university according to its place in a league table, based on the premise that the rank speaks the truth about the quality of the institution. In an intriguing historical analysis of the concept of measurement, Luca Mari shows that this way of thinking has an extensive legacy. It is, for instance, expressed in a quote from the Pythagorean school: ‘Each thing that is accessible to our knowledge has a number, since without numbers we can neither understand nor know’ (Mari 2003, p. 20). This is also what Porter attests to in his seminal book on trust in numbers (1995). The ‘numbers as facts’ attitude is often the stance of lay persons towards a given metric. As Marilyn Strathern observes, those who are farthest removed from the production of a certain number, tend to sanctify it the most (2000a, p. 8).

Not only the relevant literature, but also daily life provides ample evidence of this. Many people strongly believe that intelligence can be ‘measured’ and expressed as a single figure, or that countries (or even the federal states of Germany) can be definitely ranked according to the happiness of their population. The questions that arise usually do not concern the metric itself and its relation to truth but rather specific results, such as ‘what is it that makes people living in Denmark happier than those living in France?’² In some cases,

the fact that lay people adopt the ‘numbers as facts’ attitude can itself *create* facts, such as when high-performing students flock to high-ranking universities and thus further strengthen it intellectually and economically. Two further ways in which this attitude is played out are as institutional practice and as a heuristic. Concerning the first of these, numbers often *function* as facts in institutions, regardless of how individuals might think about them. A case in point are global health metrics. Even though donors and recipients of humanitarian aid may believe certain health indicators, such as the maternal mortality metric, to be flawed, the latter nevertheless perform the part of facts in directing funding and readjusting policies on the ground (Oni-Orisan 2016; Storeng and Béhague 2017). Institutions can draw on the ‘numbers as facts’ trope in order to facilitate the decision-making process or even to off-load responsibility for it. As Porter puts it: ‘Quantification is a way of making decisions without seeming to decide’ (1995, p. 8) – by hiding human motives behind the purported objectivity of numbers, actions can be dressed as necessity rather than choice. As part of a heuristic strategy, all of us individually are prone to treating numbers as facts when ‘thinking fast’ (Kahneman 2011). Under less than ideal epistemic conditions, such as time pressure or too many options, numbers can significantly speed up decision-making if they are treated as facts. An example are online product ratings. We rarely have the time, or even the possibility, to compare products in detail and thus rely on star ratings or five-point scales to make a decision based on the assumption that the numbers more or less reflect the truth and thus offer knowledge.

The second, more critical attitude towards quantification and its products can be labelled ‘numbers as information’. As opposed to facts, which are true by definition, information can be true or false. Information says *something*, without guaranteeing that it is correct or relevant to the issue at hand, or that it will lead to knowledge. Those who adopt this attitude towards a given metric often show awareness of its constructedness and drawbacks and handle it with caution. Within sociological work on practices of quantification in particular, this stance is characteristic notably of the authors but also their expert informants. An epidemiologist who works with maternal mortality metrics argues that these are unsound (Storeng and Béhague 2017), 800 statisticians petition for the abolishment of the notion of ‘statistical significance’ (Gelman 2019) and the dictum ‘do not trust any statistic which you did not forge yourself’ is oft repeated by specialists. In her work on calculative practices in real estate business, Bläser (2017) demonstrates that those experts who calculate the value of assets in capital investment companies are, in contrast to their clients, well aware that a favourable rating (for example AA) is the result of much effort – including calculation, backwards calculation, and tweaking parameters until the desired output is achieved (2017, p. 125). Vormbusch too, in his study on calculative human resource management, concludes that:

In expert cultures anyway, there can be no talk of a naïve-objectivist or, in the words of Daston and Galison (2007), ‘mechanical-objectivist’

presentation. The social rule of numbers is placed on a new epistemological foundation: it is no longer in need of the belief in an objective praxis of representation' (2012, p. 21, own translation).

It is important to note that both attitudes towards the products of quantification – 'numbers as facts' and 'numbers as information' can and do coexist within institutions and even within an individual. The prime example is the expert who, despite knowing that the indicators they are working with do not necessarily reflect the whole truth about a subject matter, nevertheless bases important decisions on them and thus treats these numbers as facts for pragmatic reasons. The informants in Bläser's and Vormbusch's work are such specimens.

In my fieldwork, it became apparent that the school is also a social space in which both understandings of quantification exist in close proximity to one another, in relation to grades. I found the more critical 'numbers as information' attitude to be less present, but it was nevertheless observable. Under ideal epistemic circumstances, notably in the interviews when there was plenty of time to reflect, teachers often stated that they did not perceive of grades as objective measurement results. They often drew on their own experience of coming up with grades to argue that the latter were to some extent informed by personal preferences for certain kinds of students or behaviour, or gut feeling. The teachers may have of course also partly adopted this stance to come across as critical thinkers, or to proactively safeguard themselves against the, it seemed, often feared reproach that (their) grades were not objective. The critical attitude towards grades is especially strongly represented in expert discourse on the matter. As was shown in [Chapter 1](#), hardly anyone who is engaged in research on grades would seriously claim that they could be equated with facts. Interestingly enough, however, this critical view is often not extended to other forms of quantitative assessment in education. In particular, standardised testing continues to have an especially respectable epistemic status and is often hailed as a panacea to redress the ills of grading (see for example [Heller 1974](#); [Jones and Ennes 2018](#); [Phelps 2012](#)). Apart from teachers and experts, an additional group which I observed exhibiting the 'numbers as information' attitude towards grades was constituted by some of the older students. Especially those in the 'mediocre' or 'failing' areas of the grading scale sometimes attempted to console themselves with the idea that grades were partly based on teachers' feelings of sympathy and antipathy and not solely the result of impartial, factual measurement of performance. A case in point was Enes from the final year who was adamant that marks bear no relation to intelligence (see [Chapter 5](#)). However, it is worth remembering that these students' off-the-record statements somewhat cast into doubt the extent of their critical view of grades as mere information, for the pupils often made their grades central to their self-image.

The clearly dominant epistemic status of quantification in my fieldsite was that of 'numbers as facts'. Most students, and especially those at a young age,

tended to take their grades at face value – as a true reflection of their performance, their capabilities, and even their intelligence. It was already discussed in [Chapters 5 and 6](#) that grades have a lasting impact on students' self-perceptions and their ideas about social worth. This phenomenon presupposes strongly held beliefs about the accuracy of grades. Under less than ideal circumstances, that is in the chaos of daily school life, teachers too tended to treat grades as facts. For example, a quick glance in the database, on a report or on a PDF file in the grading conference was enough to form an idea about who was considered a 'successful', 'mediocre', or 'failing' student. Above all, the institution of the school, and society more generally, *treat* grades as facts for pragmatic purposes. Decisions of the most far-reaching biographical kind are usually based entirely on marks. Retentions and progression through the school years are regulated according to prespecified rules about which grades a student ought or ought not to have. Admission to the Abitur but also to university courses is, at least in Germany, decided exclusively on the basis of grades (for most courses), and many prospective employers sift applications according to this criterion at first. In practical terms then, grades are facts.

That the school is a context in which numbers are often thought of and handled as facts, has important epistemic implications. As I have shown above, facts are considered a key source of knowledge. It is, however, not the only one. Especially testimony has a crucial, though traditionally undervalued, place in knowledge acquisition. The school is an ideal setting in which to observe what happens when these two sources of potential knowledge clash. That is, when grades – as alleged facts – are opposed to testimony, in this particular case that of students.

Numbers versus testimony

It is rather intriguing that the German word '*Zeugnis*' translates to both 'report card' and 'testimony'. Based solely on this linguistic observation, one could assume that when students contest certain grades of theirs, that the two kinds of '*Zeugnis*' – the report card and their testimony – would be on a par in terms of their strength. Word against word, so to speak. What is, however, lost in this depiction is that the two clashing sources of potential knowledge differ in their *form*. Crucially, one is quantitative in nature whereas the other is qualitative. It is not so much word against word then, as number against word. During my fieldwork, it emerged that this had consequences for the epistemic standing of grades and student testimony, respectively. Rather than competing on the same level, two other dynamics were frequently observable: either quantification overrode testimony, or it foreclosed it completely. In the following, I will illustrate these phenomena in turn.

Perhaps the simplest and purest instantiation of quantification overriding testimony in the field involved myself. It is a 'pure' case insofar as it is not affected as much by other epistemically relevant dichotomies such as teacher/student or institution/individual which will be addressed in more

detail below. On my first day with the year nine philosophy class, I accompanied the students to a careers fair. During a bumpy bus ride to the venue, I stood opposite Mr Wegener, the philosophy teacher. In the middle of our conversation, he asked a question which I felt he had been circling around for some time. 'So you're studying in Oxford, huh?' he asked. I nodded. 'I guess your GPA wasn't too bad then either?' 'I suppose,' I replied. 'I had a 1,0.' 'How BORING!' Mr Wegener shouted immediately, so that several students turned their heads. With exaggerated emphasis and a booming voice, he repeated 'How BOOORING! Well, I was a completely different type. I had a good time.' I laughed and replied 'I did too.' After a few seconds of silence, Mr Wegener concluded the discussion by stating dryly 'I don't think so.' There was without a doubt some theatrics involved in this scene and, even though it did not feel like this then, I may have had a chance to convince Mr Wegener that also those with a 1,0 GPA can have an enjoyable school time. Nevertheless, the exchange illustrated how quantification can devalue testimony.

Another instance, also involving Mr Wegener, demonstrated this even more clearly. A philosophy lesson in year nine had just ended and the students were leaving the classroom, except for those on cleaning duty that week. I was still standing in the back of the room with Mr Wegener and started to gather my things. Mr Wegener also taught philosophy in year five, so I said to him 'Jamil has been begging me to come to his philosophy lessons for a week now. He says he's very good and he calls himself the philosophy baba.' Mr Wegener smirked and said 'Yes, I gave him a 1. Normally I don't do that.' 'No!? You don't give 1s? Why?' I asked. 'Well, sometimes. Rarely. I do have standards. Although, I've recently heard that especially in year five one should give good grades to motivate the student. I'm not so sure about that, it does set a certain tone. Although, well, bad grades do that too.' Emilia, one of the students had apparently been listening in while sweeping up around us and took the opportunity to chip in. Emilia was 14 years old, German born and had ambitions to proceed to the Abitur. 'Mr Wegener never gives 1s,' she said to me. 'Never' The accused began to protest loudly. 'What? I don't give 1s? Have you ever deserved a 1?' 'Yes, in German, in year five. Definitely.' Emilia now looked her teacher straight in the eye, solemnly and with a provocative air. I could tell her getting more courageous as she proceeded. 'Back then, I had 1s in three exams in a row. But I still didn't get a 1 on the report!' Mr Wegener appeared somewhat staggered and retorted 'Yes, well, then you weren't that good orally.' 'I was. Back then I still put my hand up a lot.' 'Then you would have had a 1, so that can't be.' 'It was like that,' Emilia snapped and looked at me as if to test my allegiance. 'Students have a memory like elephants,' was my vague contribution and Mr Wegener became increasingly agitated. He addressed Emilia again. 'Honestly, how many 2s did I give you? All the time!' 'Yes, but I would have deserved more.' She turned on her heel and marched towards the bin with the dustpan. 'She's quite convincing,' I said to Mr Wegener. 'No! She's not convincing at all,' he shouted after her. Then, quietly, he added to me 'She really did have fifteen, sixteen 2s in a row. But she's just so quiet. She doesn't

say anything.' Emilia returned and Mr Wegener raised his voice again. 'Yes but that's the problem. If I'd ask you today, how many times did you put your hand up? Zero times. Zero.' 'Yes, because I'm not well today.' 'But you don't raise your hand that often on other days either.' 'Maybe it's because I'm often not well?' Emilia asked flippantly. Mr Wegener did not say anything anymore, so I filled the silence by saying laughingly 'It seems that you're too strict.' This apparently threw Mr Wegener off balance entirely and he only responded 'What? Too strict? As if ... er ... er ...' I proceeded to tell him that students often talked about the oral participation grades in interviews and that they apparently posed a problem for many. I added that it was rather a German phenomenon and that, for example in England, participation in class was not graded. 'Yes pff ...', Mr Wegener huffed, 'but I *like* it when someone talks to me.' He lowered his voice again and hushed 'but with Emilia it's just ... What can I say, she's a *girl*, she's *fifteen* ...'

The scene showed quite impressively how different kinds of information are accorded different value. Emilia's testimony was systematically devalued by Mr Wegener, on the basis of a number, a final grade which he himself hardly remembered. Mr Wegener continued to draw on ever more questionable reasons ('she's a girl, she's fifteen') as to why the grade *must* have been accurate. The epistemic climate of much of the school is neatly summarised in the sentence 'Then you would have had a 1, so that can't be.' The final number, in this case the 2 on a report card, was the ultimate arbiter and settled the question for Mr Wegener. As if both participants in the argument sensed the strength of quantification, both Emilia and Mr Wegener drew on numbers to buttress their claims: three 1s in a row; fifteen, sixteen 2s in a row; putting up one's hand zero times, the age 15. It is important to note, however, – because characteristic of the school context – that the one number which Emilia cited was one also produced by her teacher, and not one of her own making.

Of course it could be that Mr Wegener partly defended his grade in order not to lose face before a bystander. There is nevertheless good reason to believe that Mr Wegener's unwillingness to accept Emilia's arguments was not just borne out of this, but representative of the general status of grades. Several students told me in our interviews that they did not want to complain about unjust marks because experience had taught them that it would be to no avail. In addition, there was a widespread fear that criticising the teacher would torpedo their relationship with them and thus result in more incontestable bad grades further down the line. That teachers justify their final grade with further grades, thus harnessing the epistemic strength of quantification as evidence, was also something which could be observed frequently. Many teachers graded students after every lesson and kept records of these interim marks for later use. While a trainee teacher taught the philosophy course, Mr Wegener sat in the back of the class with me and assigned smiley faces for oral participation to every student in real-time in a teacher app on his iPad. He claimed that he used the emojis because he 'didn't want to have a number in mind', although he proceeded to tell me how the six faces mapped neatly

onto the six grades. When I asked Mr Wegener why he used the tool, he stated that it was good for seeing the ‘big picture’ but also for when parents criticised final grades on the parent consulting day. ‘Then it looks good when the parents see how much I have here,’ Mr Wegener stated. Faced with the starkly unequal distribution of numbers as evidence, it is extremely difficult for students to be taken seriously when contradicting their grades. This also applies in relation to their peers and parents. As was already shown in [Chapter 4](#), it is almost impossible for low-performing pupils like Nasir to make any claims to being ‘clever’ or ‘intelligent’ when his peers see that he has ‘bad’ grades. Leila expressed a similar sentiment in relation to her parents. She said that when they saw low grades of hers, she always wondered if they thought her stupid – an impression that she evidently felt unable to redress.

That quantification habitually overrides testimony also becomes apparent in the context of appealing grades formally. Once a mark is fixed, it is very difficult indeed for students to get it changed. Informal conversations or ‘haggling’ with teachers only make sense before the grade has been entered in the database, and the result tends to be only a few points better. Grades perceived as grossly unfair are not likely to be redressed in this way. If students decide to officially contest a grade, they need the full support of their parents and, depending on how far the issue is pursued, legal aid. Unsurprisingly then, appeals were extremely rare in my fieldsite. In fact, the distinctly unsuccessful one mentioned in the introductory vignette remained the only instance I ever heard of. The usual procedure is that students complain about a grade to the school first, which subsequently considers its position on the matter. If the school sticks to the teacher’s verdict, then parents can decide to escalate the issue to the supervisory school authority (*Schulbehörde*). Students and teachers must bring proof of their position, such as notes, exam papers, and homework and the school authority assesses these to decide whether the grade or grades in question are justified in their eyes. As should have become clear throughout this chapter, it is usually the teacher who will have the most quantificational evidence on their side – and notably of their own making. This means a distinct epistemic disadvantage for students, as those who are on the receiving end of numbers. As Heintz observes, ‘while language always provides a Yes- and No-Version and thereby a sentence already carries its negation within it, a negation in the case of numbers needs to be actively produced’ (2007, p. 78, own translation). Bläser adds, ‘this means that the simple assertion of the falsity of numbers cannot be carried out without some effort’ (2017, p. 77, own translation). The statistics on grade appeals offer strong empirical support for this difficulty to redress a number. The district government of Detmold is home to one of the responsible school authorities in North Rhine-Westphalia. It represents 677 schools with about 300,000 students, all of whom receive at least one hundred grades per year ([Bezirksregierung Detmold 2021](#)). However, in the year 2016, only 112 appeal procedures were registered, each concerning only a single grade, and merely 16 of these ended with a better result for the student. If parents and the student are not pleased with the result, they can pursue the

issue further in court, but in 2016, this was only done in eight cases, two of which were concluded with a settlement (RP Online 2018).

Quantification can not only *override* testimony, as was just discussed, it can also *foreclose* it completely. With regards to grades, this is the default position when it comes to institutional decision-making. Retentions, that is students having to repeat a given year, are decided according to prespecified rules, and solely on the basis of grades. While teachers do discuss individual students and their grades in conferences and can agree to be somewhat more lenient in their grading to avoid retentions, once the marks are fixed, the rules apply without exception. The student is not heard in this process, let alone asked if they think their grades are justified. The same goes for decisions about proceeding past year ten, admission to the Abitur phase, and the passing and failing of the Abitur. These decisions are based exclusively on marks. The approach is naturally also characteristic of most of the consumers of grades outside of school. University admissions teams and prospective employers usually sift applications according to quantificational criteria first and thus do not leave much or, in fact, any room for student testimony on either the accuracy of their grades, or their self-perception more broadly. In other words, quantification here entirely supersedes testimony. Grades are a particularly powerful form of quantification in this respect, for they remain with the individual throughout a lifetime. As Achermann phrased it incisively, 'Entries in criminal records are wiped a certain time after parole; report cards stay for life.'³ (1966, p. 18). Having highlighted the two most common outcomes of the interaction between grades and student testimony, I now turn to an analysis of these dynamics in epistemological terms.

Testimonial injustice

In her 2007 book, the social epistemologist Miranda Fricker introduced the term 'epistemic injustice' to name a widespread and yet hitherto not systematically investigated phenomenon. Epistemic injustice picks out, as the term suggests, precisely those cases of injustice, where 'a wrong [is] done to someone specifically in their capacity as a knower' (2007, p. 1). Epistemic injustice is used as an umbrella term for two subordinate forms – testimonial and hermeneutical injustice. Both of these concepts are salient in connection to social quantification, but in the following, I will concentrate on testimonial injustice for the time being. According to Fricker, testimonial injustice is a discursive phenomenon which occurs when 'prejudice causes a hearer to give a deflated view of credibility to a speaker's word' (2007, p. 1). Put differently, when a hearer fails to accord to a listener an appropriate amount of belief on the basis of stereotypes, the hearer is culpable of enacting testimonial injustice. One of the examples which Fricker uses is that of the fictional Tom Robinson in '*To Kill a Mockingbird*', who is falsely accused of having committed rape and whose defence in court is not taken seriously by the all-white jury on the basis of his own black complexion (2007, pp. 91–92). The concept has also figured

prominently in feminist philosophy, for instance to describe ‘mansplaining’ in epistemic terms (Luzzi 2016). Fricker argues that the wrongfulness of testimonial injustice partly lies in the fact that it silences its victims. This can be done in two ways: either because the people in question are not being *heard*, that is they ‘are given so little credibility [...] that their speech is effectively silenced’ (2007, p. 139), or because they are not *asked* to give their opinion (‘prejudicially pre-empting [their] word’ (2007, p. 131)). These two variants of silencing neatly map onto the two ways in which quantification often relates to testimony – namely overriding or foreclosing it, respectively.

Two concepts are central to Fricker’s theory of testimonial injustice: credibility and prejudice. Broadly speaking, testimonial injustice occurs when a speaker is given too little credibility because the hearer relies on prejudicial stereotypes. It is important to note that, with its emphasis on stereotypes, Fricker’s theory is concerned with cases where a speaker’s word is undervalued because of who they are. In other words, Fricker is mainly interested in credibility deficits which result from the characteristics of the speaker qua their belonging in a particular social group (for example the group of blacks, women, homosexuals and so on). In the school context, this is an obviously salient issue when it comes to how students’ voices count in relation to their grades. Students belong to several social groups which are epistemically disadvantaged, and in the first instance, this has nothing to do with quantification. None of the ethnographic examples cited so far can be precisely disassociated from these non-quantified ways in which students are often at an epistemic disadvantage. In the dichotomies child/adult, test-taker/test-administrator, student/teacher, individual/institution, pupils are always in the categories which entail a risk of receiving less than due credibility, due to power imbalances and stereotypes at work (Carel and Györfy 2014; Hanson 1994, p. 304; Murris 2013). In my particular fieldsite, social class was sure to supply an additional set of prejudices and there is strong evidence from educational research that prejudices tied to gender are also relevant (Kollmayer, Schober, and Spiel 2018). Above and beyond these factors, which are all connected to the characteristics of the individual, there is however good reason to believe that the *form* in which a speaker presents their information also plays a crucial role for testimonial injustice. This is a possibility not accommodated for in Fricker’s original work, but one which has been teased out subsequently by other thinkers, especially by Gloria Origgi.

Origgi argues that prejudices are but one factor which influences our credibility judgements and she indicates a longer list of ‘norms and strategies’ (2012, p. 225) which have an effect on whom or what we believe. Three of the items on the list are of particular promise for explaining why information that is presented in numerical form enjoys such a high epistemic status. The first of them is labelled ‘socially distributed reputational cues’. Origgi states that ‘a reputation is the set of social evaluative beliefs that have been cumulated around a person, an item or an event’ (2012, p. 231). Over time, a good reputation ‘can crystallize [...] into “seals of approval” or “seals of quality”

that become easily readable labels of reliability' (2012, p. 231). Quantification can well be understood as such a 'cue of reliability' (2012, p. 232). One of the most consistent findings in the quantification literature since the days of Porter (1995) is that numbers, and other products of quantification, are taken to be closely connected to the notions of objectivity, neutrality, rationality, 'scientific-ness', and truth (see for example Espeland and Stevens 2008, p. 417; Miller 2001, p. 382; Porter 1995). Put differently, numbers are indeed a, if not one of the most influential, 'seal of quality' which a piece of information can bear. The clearest instantiation of numbers taken as an indicator for trustworthiness is encapsulated in the 'numbers as facts attitude' already presented above.

A second interesting factor is what Origgi calls 'internalized social norms of authority.' She describes that we often form our beliefs on the basis of our 'deferential relations to various authorities, such as family, culture, mentors, institutions, and so forth' (2012, p. 230). It is likely that our inclination to assign credibility to information presented in quantified form is partly the product of this strategy. The pieces of quantification circulated in the media – arguably many people's primary source of information about 'the world' – are often produced by experts and scientists. This close relation between quantification and people deemed authoritative can further bolster the epistemic panache of numbers.

A final aspect which likely contributes to the tendency to overvalue quantificational information is that of 'robust signals.' As Origgi puts it, 'among the strongest cues of reliability we use to assess the credibility of persons and items of information, there are *robust signals*; that is, signals that are difficult to fake' (2012, p. 232). The philosopher uses the example of a scientist who can powerfully signal their credibility by publishing in *Nature* – a signal which is hard to feign (2012). Robust signals also contribute to the epistemic status of quantification, again as a result of the perceived closeness of the latter to science. The way in which science arrives at numbers, or so is at least the popular parable, is by measurement. The epistemology of measurement has undergone significant historical shifts. While expert communities now acknowledge the presence of uncertainty (or 'errors') in *any* measurement, the widespread public belief is still one of earlier times, described further above, that measurement 'lays open' the inherent truth about the measurand (Mari 2003, pp. 20–21). In other words, many people consider measurement a robust signal which is difficult to fake and the close association of quantification with measurement thus constitutes a further reason for the credibility of numbers.

The array of factors discussed explains why quantification often either overrules or forecloses testimony. While the trustworthiness of testimony is usually tied to the context-dependent reliability of the speaker and what they say, quantification *per se* makes claims to credibility, quite independently of who speaks and what the content is. As a result, it is hardly vexing that the numbers as facts attitude prevails in many social contexts and makes it difficult for testimony to count. As was shown above, this dynamic certainly exists in

relation to grades. Even if not everyone in contact with grades entirely thinks of them as facts, it is nevertheless the dominant attitude in practical terms. Students routinely experience testimonial injustices vis-à-vis their grades for when their voices are not heard or when they are not even asked, they are denied the full status of a knower.

Two aspects are important to note before moving on. Firstly, in the context of grades, testimonial injustice not only occurs in relation to the accuracy of a certain grade. It is not only about the (un)fairness of a given mark, but more importantly about what grades purport to say about a student. In the most important biographical decisions, both within but certainly after school, grades are unofficially handled as indicators. They may, for example, be interpreted as signs of studiousness, ambition or – most questionably – intelligence. A student may well have ‘deserved’ their 5s in exams or vocabulary tests or for lacking participation; but whether this allows inferences about the kind of person they are is far from obvious and yet often uncritically assumed for practical reasons. It is especially in this connection that student testimony is not taken into account. A candidate who is not even invited to an interview is effectively robbed of their voice on the matter, and of the capability to self-present. Seeing as so much power and status is distributed through application procedures, this poses a thorny political problem which was touched upon in [Chapter 6](#). Secondly, it should be remembered that testimonial injustice towards the bearers of grades is not only enacted by teachers or representatives of institutions following the school (university admissions, employers and so on). Rather, as was shown throughout this book, pupils also face tremendous difficulties in upholding images of themselves which clash with their grades, towards peers, parents, and crucially towards themselves. Where students conclude solely on the basis of their grades that they must be ‘stupid’, this is a prime instantiation of testimonial injustice at one’s own hands.

Given the insights illustrated thus far, I made it a central aim of my fieldwork to understand how students react to and navigate a context with a systematic epistemic imbalance in favour of grades.

Reactions to the epistemic climate

In my fieldsite, I observed mainly two different responses to the epistemic climate detailed above, namely adaption and a sense of powerlessness. I investigate these in more detail in the following, before I close with a discussion on the harms of testimonial injustice.

Adaption

While both responses – adaption and a sense of powerlessness – are not mutually exclusive, I found the former to be limited to those pupils with relatively high grades. The adaptive response to a generally superior credibility of grades is to play by the rules of the game. What matters is making absolutely sure that one has what is required, high grades, thereby creating favourable ‘facts’. For

the students endorsing this response, school was a question of gearing up for the job market, of getting the numbers right, knowing that they were what it came down to. In my fieldsite, someone exhibiting the adaptive strategy was Jarek. Faced with the competition of what he perceived of as 'masses of high school graduates', he thought that grades were the primary means by which to stand out. Jarek considered marks 'very effective' for this purpose and, as his teachers confirmed, worked exceedingly hard to attain them. In an interview, I asked Jarek if he ever imagined someone whom he performed *for*. Jarek's response was a striking illustration of the epistemic environment that he felt he was navigating:

Well one often maybe has this vision that one is sitting in a job interview and there's someone from human resources who x-rays your CV, your grades very carefully. And one just thinks 'Oh my God, everything has to be right, now.' Because if they were to find something that doesn't fit, I won't get the position or the university place. And I do think that many people see this ... this imaginary chairman of human resources (*Personalabteilungsvorsitzender*) and think 'Oh God, everything has to be perfect.'

Faced with the remorseless scrutiny of the 'chairman of human resources', and the conspicuous absence of his own voice in the scenario, it appeared that Jarek saw no other way to succeed in life than to work as hard as he could for outstanding grades.

Eleven-year-old Nayla was also intent on stellar outcomes and invested tremendous efforts in her school work. The epistemic imbalance in favour of grades became especially clear in several remarks of hers which involved unknown, faceless 'someones'. When I asked Nayla if she would prefer grades or texts on her report, she replied that she would rather have grades for if *someone* were to ask her 'What do you have in German?' it would not be feasible to read a whole text to them. For Nayla, her school efforts were directed at receiving very high marks so that she could become a doctor. When I inquired as to why she strove towards this, she replied:

If, for example, someone asks 'What kind of profession are you?' then I can say 'doctor' and that just isn't a subject where one can say 'Never mind, anyone can do that.' You know, anyone can be a doctor. It should be a profession where people say 'Oh wow, she's clever!' Or so ...

In this case, it is again neither Nayla's testimony on her own person nor her comportment which she sees as constitutive of how others think about her. If she is to convince people that she is clever, it seems that she must gather evidence: grades and a profession for which grades play a vital enabling role. Nayla specifically referenced the use of grades as 'facts' when I asked her to respond to a thought experiment. I proposed the scenario where Nayla was

taking part in an application procedure for becoming a doctor. However, rather than judging her on the basis of her report card, those responsible would invite her for an interview and then decide if she was fit to train for the job or not. 'How would that be for you?' I asked. Straight away, Nayla replied:

Actually, that wouldn't be so good for me because ... if I say ... I mean anyone can go there and say: 'I want to become a doctor.' And say, for example, that one is good. You can't see if she's really well or not so well suited for studying medicine. And then ... there is no proof, so to say.

What was intriguing about Nayla's reply was that she did not answer on the basis of what would be beneficial to *her*. Seeing as she thought herself indeed suited for the study of medicine, the fictional interview procedure should have helped her realise this aspiration. Instead, however, Nayla put herself in the shoes of the examiners and mused that, in the absence of grades, they would have absolutely no indication as to the character of a candidate and 'anyone' could become a doctor this way. This is of course a legitimate practical concern in the simplistic thought experiment, and yet Nayla's answer provided a striking depiction of the epistemic climate she felt she was living in. It is one in which evidence is decisive and one in which testimony does not count as such. The report is thus what speaks in one's place.

In my fieldsite, the adaptive response to the epistemic climate was rather rare and it was a noticeable pattern that the children who exhibited it had parents who were in a position to actively take an interest in and support their children in school-related matters. It was also observable that this particular orientation vis-à-vis grades involved some costs, mainly heightened stress. Without exception, all of the students with remarkably high grades talked about this issue in our interviews, and more than most of their peers. Sleeping problems (especially before exams) and headaches were frequently mentioned and other things cited included feeling stressed, worrying, nosebleeds in stressful situations (notably exams), or perfectionism. Several of these students mentioned what appeared to be excessive exercise, in Nayla's case to the point of almost passing out in her bedroom. The adaptive response can also be discerned in the writings of social scientists on school worldwide (see for example [Bittencourt 2021](#); [Carless and Lam 2014](#); [Rabow et al. 1998](#)). These examples support the finding that making sure to get the numbers right, and to try to live up to the school's every demand in this respect, creates rather strong pressure on pupils.

Powerlessness

The second response to an epistemic environment which emphasises the quantificational was what appeared as a pervasive sense of powerlessness in students. Pupils across the achievement spectrum often exhibited this general attitude of lost hope and feeling small. Powerlessness is here not to be equated with lethargy; it was not about laziness, not caring or refusal. Quite

the opposite. As I showed in [Chapter 6](#), the students whom I met, periodically picked themselves up again, especially shortly before reports were due, and tried to turn their fate around. Certainly, for many of them it was often too little too late in the eyes of the teachers, but most students had nevertheless fully internalised the importance of effort and betterment. The feeling of powerlessness was rather expressed as 'school fatigue' or statements to the effect that the world is what it is; that grades are what matters and that this cannot be helped, regardless of one's own thoughts on this. This response to the credibility excess of numbers became especially clear in the older students' remarks about what they called 'the system'. The term came up in several of my interviews with the Q2 students without my prompt. For example, when I asked the 18-year-old Johanna if she thought good grades were important, she replied: 'In our system, yes. If you have bad grades, you can't achieve much.' Her classmate Sonia stated in one of her interviews: 'In today's system you're being told that grades reveal everything.' In the follow-up interviews, I made 'the system' a central topic and asked all Q2 students if they could describe this context that they were inhabiting with some adjectives. The responses were suffused with a rather forceful sense of powerlessness and I have reproduced several of them below.

Unfair is too hard [...] It's really difficult to find adjectives because if I think of a word then I instantly think ... well, how can you do it differently? [...] It's such a big ... such a big system and I wouldn't know how to change it. (Malte, 18)

Perfectionist. It leads to a morbid perfectionism in many [...]. So I would describe it as close-minded, perfectionist, and in many cases also ... (draws in breath) ... merciless. I often have the feeling that no faux pas are allowed. Especially if you're in the range of 1s and 2s like me, I just have the feeling that if you forget your homework once or if you just have a bad day ... you have this feeling 'it's all over now.' So that you really ... if you go to school, no matter how you're feeling, no matter what's going on in your private life, you have to perform at command. And everything else is punished with bad marks. A pupil with somewhat lower marks may see this differently, but if you really want to perform highly, it is for sure a hard system. (Jarek, 18)

It's definitely unfree. You have to comply with it the whole time. There's constantly this pressure being exerted that you always have to strain yourself. And ... you're not allowed to have a bad day. Well maybe you can have a mediocre day every now and again. If you had trouble with your parents or whatever, you'll be punished with a bad grade for not participating. (Kira, 18)

Well maybe unfair (sighs) [...] And ... the system is stubborn, I'll say. It just stays the way it is. And the teachers and everyone just go

with it. You're being told that you have to comply (*dran halten*), so you comply. No one questions it, really [...] And I'd say frightening. Because ... the system ... can really, in inverted commas, destroy the lives of some. (Leila, 20)

Now ... you *have* this duty to go to *school*. You have to go to school and ... you have no other choice. You have ... you must ... you're trapped in this system. You're born and people tell you that you have to do well in school. Or ... that's bound to be different for everybody but that's my perspective. (Sonia, 18)

It's just that you're somehow stuck in this system. That the grades somehow influence you. It's a given and you can't do anything against it. It's just the way it is [...] I'd also say it's an anonymous system and one that is relatively unfathomable. You don't know on what basis it's built and it's sometimes hard to comprehend how it came into being. (Maria, 18)

The students' sense of powerlessness was also neatly summarised in a statement by the 14-year-old Daniel.

If the head teacher says something and you're against it ... you just can't say anything. She can take apart your whole life. She can disassemble you. She can make you into a tramp (*Penner*). It's this power that she has. She can write all sorts of shit in somewhere so that no other school will take you.

What Daniel described is testimonial injustice proper and it applied, he later specified both to grades and reports, but also to what he thought was a generally low credibility of students.

Interestingly, many of the older students talked in a way which suggested that they thought of their teachers as being part of the same system, rather than an external 'enemy'. Leila, for example, said: 'We sometimes hear from our teachers "Well we don't know why it is that way but we just do it."' In my interviews with the teachers, this impression was corroborated. Mr Geylanî lamented – again without my prompt – that 'the system' obliged him to grade students and that all he felt he was doing was judging their degree of conformity with the curriculum. Mr Wegener stated 'the system forces me to do many, many things, even though I would much rather concern myself more intensively with my students.' Later, he described how difficult it was to effect support for students with special needs if their grades were 'too good' to supply evidence for the problem. Mr Wegener said that 'in order to achieve that [support for the student], you have to take on the system.' Once again it was the epistemically superior value of numbers which caused a sense of powerlessness, when equipped only with testimony. Indicative of this was also the

fact that Mr Wegener pronounced the word ‘system’ with a conspirational voice and laughingly added ‘there’s something Kafkaesque there.’

Discussion – on what counts

In this chapter, I have shown that two possible attitudes towards the products of quantification can be observed. The ‘numbers as information’ attitude is often present in experts and when individuals have the possibility to ponder in-depth any given metric with its inherent conventions, biases, and uncertainties. The ‘numbers as facts’ attitude is more widespread in many social contexts, as it is indicative of lay people’s perspective and frequently underlies the pragmatic handling of numbers. Where numbers are likened to facts, other sources of potential knowledge are routinely undervalued. I have shown that, in the school context, it is in particular student testimony which is either overwritten or foreclosed entirely by grades. As a result of navigating this epistemic context, some of my research participants exhibited adaptive tendencies – ‘getting the numbers right’ – and, more frequently, a feeling of disempowerment towards ‘the system’.

These insights offered by an ethnography of being graded are relevant for social quantification more broadly. Whenever the ‘numbers as facts’ attitude prevails in the minds of people, or forms the basis of decision-making, there is a significant risk of falling prey to the so-called McNamara fallacy. Put simply, it consists in the assumption that what cannot be measured is not important (O’Mahony 2017, p. 1). The concept is named after Robert McNamara (1916–2007), mostly known in his role as the US Secretary of Defense during most of the Vietnam War. After his MBA in Harvard, McNamara became the youngest assistant professor there at the age of 24. He was later part of the US Army’s Department of Statistical Control and planned bomb strikes in WWII to make them more ‘efficient’, using mostly statistical modelling. Following this position, McNamara took up a post at Ford Company where he applied statistical analysis to help the weakened enterprise to make profit again – together with his group of colleagues referred to as the ‘Whiz Kids’. In 1960, McNamara briefly became the president of Ford for two months, before he was recruited by President John F. Kennedy and served as the US Secretary of Defense (Baskin 2014; Cukier and Mayer-Schönberger 2013). His approach to warfare was the same as he had already applied to production at Ford, namely quantificational in nature. The most important metric was ‘kills’, that is, dead enemies (Baskin 2014; O’Mahony 2017). For as long as the number of deaths on the opposing side was higher than that of fallen Americans, this was read as an indication of winning the war. Other quantitative measures that were drawn upon were ‘tonnage of dropped bombs, ships intercepted and miles of land controlled by US and allies’ (Baskin 2014), and a Hamlet Evaluation System which saw US army advisors grade the situation in their district from A (best) to E (worst) (Belcher 2015). Based on these data, the US long concluded that they were ultimately going to emerge as the victor

and continued to direct gigantic sums of human resources and money to the armed conflict – with well-known disastrous consequences. As became clear in hindsight, there was much about the Vietnam War that could not easily be expressed in numerical terms and factored into a ‘calculation’ of war tactics. These other aspects included the fact that the numbers of Vietnamese deaths were grossly overreported by the US army, given McNamara’s evident interest in these figures – a classical gaming response (Belcher 2015; O’Mahony 2017). Moreover, the resistance and resilience of the Viet Cong, as well as the drastic change in US public opinion following war reporting from the ground, were not represented in McNamara’s quantificational approach (Baskin 2014). In his obituary in *The Economist*, it reads that ‘[McNamara] was haunted by the thought that amid all the objective-setting and evaluating, the careful counting and the cost-benefit analysis, stood ordinary human beings. They behaved unpredictably’ (Hendrick 2015).⁴

It was the sociologist Daniel Yankelovich who coined the term ‘McNamara fallacy’ in the context of business. He describes it as follows (1972):

The first step is to measure whatever can easily be measured. This is OK as far as it goes. The second step is to disregard that which can’t be easily measured or to give it an arbitrary quantitative value. This is artificial and misleading. The third step is to presume that what can’t be measured easily really isn’t important. This is blindness. The fourth step is to say that what can’t be easily measured really doesn’t exist. This is suicide.

The current quantification literature does not address the McNamara fallacy, even though it is clearly relevant to many of the issues that scholars in this field engage with. Outside of this particular academic field, the notion has, for instance, been applied to criticise the overreliance on hospital mortality rates as a marker for the quality of care, the ‘target culture’ in the NHS, the randomised controlled-trial as a gold standard in drug testing, and to marketing, as well as auditing in education (Cook 2019; Hendrick 2015; O’Mahony 2017). The argument usually runs that solely relying on quantitative measures is not effective for solving the problem at hand – be it the improvement of teaching, sales, medical care, or in fact warfare – as there are many other unquantifiable factors to be taken into consideration. In this chapter, I have shown that there is more at stake in the McNamara fallacy than just efficiency. It also leads to the dismissal of potential sources of knowledge. Especially if it is humans who are being quantified, a crucial upshot of the quantitative fallacy is that the bearers of numbers face systematic testimonial injustice, given that quantification tends to overrule or foreclose testimony. This is true of pupils as much as it is of Amazon drivers laid off automatically by an algorithmic system based on (often flawed) measurements of their routes and delivery behaviour (Soper 2021), or of job applicants who are discriminated against solely on the basis of their age – so-called ageism.

Miranda Fricker's work powerfully demonstrates that testimonial injustice entails a wide range of harms and that it is thus a phenomenon which ought to be taken seriously. If a student is not given due credibility when appealing an unfair grade or when seeking employment, then they suffer a *practical* wrong (2007, p. 47) – as did Black children in 1920 and 1930 America who were tracked into lower-performing classes based on their IQ scores (Stoskopf 1999). Apart from this, testimonial injustice also causes a range of *epistemic* harms. Firstly, as Fricker argues, knowledge is prevented from passing from the speaker to the hearer which constitutes a 'dysfunction in the overall epistemic practice of the system' (2007, p. 43). Secondly, the speaker is wronged as a knower or, more specifically, as a giver of knowledge. Having their trustworthiness questioned, and with it their competence and sincerity, can be a profoundly humiliating experience for the speaker which, as Fricker stresses, 'undermine[s] them in their very humanity' (2007, p. 44). Finally, testimonial injustice can also have long-term effects because it can leave the victim to mistrust their intellectual abilities altogether (2007, p. 47). This may prevent them from developing certain epistemic virtues such as intellectual courage and the confidence to stand up for one's beliefs which are vital for the acquisition of knowledge (2007, p. 50).

Given the epistemically respectable status of quantification, the risk of testimonial injustice is high when numbers are introduced to a social context. If non-quantified sources of potential knowledge are systematically devalued, then this often leaves those who are quantified little power to attest to their characteristics and qualities or in fact to the truth, without producing numerical counter-evidence. Moreover, if numbers 'count' to the point of being decisive, if it is sink or swim, publish or perish, adapt or die, perform or else (McKenzie 2001) then this does not present individuals with many options beyond adapting or accepting their powerlessness.

So far in this book, I have analysed a wide variety of ethnographic material to work out several effects of quantification on those on its receiving end. I will now shift to a meta-level discussion where the descriptive meets the normative. Still grounded in my fieldwork but also triangulating it with philosophical theory and own ideas, I ponder the overarching question of the morality of social quantification. In doing so, I endeavour to advance the debate around an ethics of quantification by suggesting concrete, philosophically informed options for its design. I firstly deliberate on the pitfalls an ethics of quantification should avoid, before I conceptualise (some of) the harms and wrongfulness of quantifying humans, to warrant such a moral framework. I finally propose a virtue-based and a rights-based approach to constitute its core.

Notes

¹ Cf. Desrosière's attitudes towards statistics (2001) for a related but more narrow and specialised categorisation.

² The widely marketed answer to this question was 'hygge'.

- ³ Google's hiring practices are a powerful case in point. Up until recently, the cofounders Larry Page and Sergey Brin asked the SAT scores and college GPA of all applicants, no matter their age and accomplishments. The former score was read as an indicator of potential, and the latter of achievement. As Cukier and Mayer-Schönberger observe (2013), it is rather intriguing that both Page and Brin are former Montessori students for whom grades will not have been a prominent aspect in their schooling. Moreover, the authors note, Google's policy would have entailed that 'neither Bill Gates nor Mark Zuckerberg nor Steve Jobs would have been hired, since they lack college degrees' (2013).
- ⁴ Given his prominent role in the Vietnam War, it is often overlooked how McNamara's career developed afterwards. In fact, for 13 years, from 1968 to 1981, he was the president of the World Bank. As Patrick Sharma explores in *Robert McNamara's Other War: The World Bank and International Development* (2017), McNamara continued to follow a number-driven approach of setting targets and measuring their degree of fulfilment. In Sharma's analysis, McNamara was at the heart of restructuring the agenda of the World Bank, moving it towards its distinctly neoliberal current form.

9. On the ethics of quantification

The year 2020 had not been kind to the Q2 students. The final months of their school life had not just been overshadowed but consumed by the apocalyptic feeling and chaos of the first COVID-19 lockdown in Germany. The last week of school with all its splendour of themed fancy dress, celebrating and pranks was cancelled, as was the prom and the public party which was meant to pay for it. The additional money collected from bake sales throughout the year no longer served a purpose. The students had endured weeks of uncertainty isolated at home – not knowing whether their final central exams would take place and whether it made any sense to start revising or whether it would all be in vain. When the pupils finally *did* sit their exams in school, postponed by over a month, it was in a state of exception and emergency and under conditions which were still strange to everyone, as well as in a media-fuelled fear for their very life. Results day had been a grey and cold affair where the students had collected their grades in small, subdued groups under the imperative of distance. After 13, sometimes 14 years in school, their plans for holidays and years abroad had evaporated before their eyes. Added to this was the concern that their ‘COVID-Abitur’ would be seen as less valuable, as a result of allegedly lenient grading in times of crisis.

Solely on the day of the official leaving ceremony, fate seemed to finally be on the students’ side. The event had to take place out on the school yard but the weather was simply perfect. The sky was bright blue, it was pleasantly balmy, and a soft breeze was blowing. The chairs from the adjoining classrooms had been moved outside and arranged so that each pupil and their family members were sitting together, facing the curved stone steps which served as a stage. The scenery was bright and joyful; proud parents and awed younger siblings gathered in the seating area with the Abitur students. The girls were wearing cocktail dresses, and some even floor-length ball gowns, the boys had all donned suits. The teachers, also in fine dress, had gathered in the sparse shade of a few nearby trees to await the start of the ceremony. After the head teacher had spoken a few opening words, Mr Okermann stepped onto the stage, took the microphone and launched into a speech about the things which he felt had shaped the students’ Abitur years: Fridays for Future, Black Lives Matter, and COVID.

At some point in the speech, a figure appeared from behind a stretch of bushes at the far end of the school yard. It took a few moments for me to realise that it was Enes, and I was taken aback. Among the staff, and most

of the students, it was well-known that he had not passed his Abitur. He had not been admitted to sit the final exams because of too many deficits. Enes' demeanour was in stark contrast to that of everyone else. He was wearing a black T-shirt and dark cargo trousers, and had a hard, unflinching and unsmiling expression on his face. He began to walk resolutely onto the school yard and towards the stage. Many of the teachers had now noticed him too. 'Is that Enes?' someone whispered. Enes showed no signs of stopping. He walked mechanically past the many rows of chairs, his gaze fixed straight ahead. In a moment of panic, a scene flashed before my eyes: Enes stepping onto the stage, producing a gun and firing it at Mr Okermann. I was apparently not alone in my anxiety, for many of the teachers had their eyes fixed on the broad shouldered young man marching on and on. Suddenly, however, he stopped, having reached the second row before the stage. Still with an unreadable expression, he sat down on an empty chair next to a student I knew to be his best friend. The latter had passed the Abitur and it now became clear that Enes had apparently come here to congratulate and support him, despite the public humiliation this presumably meant for him. Next to me, several of the teachers exhaled audibly. Someone mumbled 'God, for a second I thought he was going to ...' 'I know,' someone else replied.

Ethics of (quantification) and its discontents

Enes' appearance at the Abitur celebrations was not only an opportunity to marvel at the human capacity for selflessness; it also encapsulated an important insight about the nature of quantification. Those who knew Enes' situation considered it thinkable – frighteningly real even – that his grades, his academic numbers, would drive him to an act of violence against the people who had given them to him. For this brief moment of terror it was evident that numbers do something to people. Even though the consequences in this case were fortunately not what they appeared, the fact remains that numbers are not simply innocent reflections of some aspect of the world. They can fundamentally change lives, for better or for worse. Perhaps the most important task ahead for quantification research therefore is to think about the moral nature of number use. The scholarly discussion around the 'ethics of quantification' (EoQ) is already well underway and this chapter is intended as a contribution to its concrete design, drawing both on the ethnographic material and my own experience working as a project manager on the ethics of algorithms in a German think tank.

In a short 1986 paper, the educational scientist Gilbert Sax ponders the possibility of an ethics of quantification, more than 20 years before the concept was famously introduced by Espeland and Stevens. Sax's verdict on the issue is clear:

I do not believe that quantification is either ethical or unethical [...]. Guns, bread, and sealing wax are, like quantification, ethical

neuters. No matter what the gunsmith or baker does or plans to do with their products, the products themselves remain ethically neutral while the behaviour or intent of the human being is clearly a matter of ethical concern (1986, p. 2).

Sax goes on to describe several abuses of quantification, including grades, but warns of either vilifying it as such, or mystifying and overvaluing it. The cautioning against extreme and simplistic positions on quantification is still relevant today, but since the days of the article, the debate has moved on considerably. The claim that guns, bread or sealing wax (or any other technology) would lack an ethical dimension has become known as the ‘neutrality hypothesis.’ Scholars in technology ethics now largely reject this proposition and instead argue that technology always embodies embedded values, partly because it is created with a specific purpose in mind (van de Poel 2021). Interestingly, it was the ostensible ‘neutrality’ of numbers which long made them escape scholarly attention (Miller 2001, p. 382), but there now exists enough empirical material to discern that it comes with a consistent set of inherent assumptions, claims, and promises which are of moral interest. More importantly still, quantification is not just a product – like bread or guns – as Sax suggests. It is also an action in its own right and therefore of immediate relevance to moral inquiry.

In their well-known 2008 article, Espeland and Stevens were the first to explicitly call for a framework to make sense of the moral implications of number use. Even though they delegate the task to philosophers, the authors nevertheless list three things that an ethics of quantification should do. Firstly, it would have to view quantification as ‘productive but partial’, that is, it would not deny the extraordinarily transformative power of numbers but would also acknowledge the large potential for harm. Secondly, the framework should acknowledge the epistemic status of numbers, recognising the ‘ancient association of numbers with ideals of rationality and universalism’ (2008, p. 432) but also its limitations and tendency to oust other forms of valuation. Lastly, an ethics of quantification should be aware of just how much power, status, and opportunity is now distributed through numbers and that, therefore, an understanding of quantification is required for making sense of justice. For almost a decade, Espeland and Steven’s call to develop this moral framework was not taken up, despite the growing need for it given the breath-taking proliferation of quantification in the social realm.

Recently, however, scholars have begun to push for an ethics of quantification, in part influenced by controversies in statistics and around COVID-19 policy. By far the most prominent advocator is Andrea Saltelli, a statistician and social scientist, who has rallied a range of well-known researchers of quantification – including Wendy Espeland, Theodore Porter, and Emmanuel Didier – and has published two key writings with his co-authors. In a *Nature* comment ‘Five Ways to Ensure that Models Serve Society: a Manifesto’ (Saltelli et al. 2020) and ‘Why Ethics of Quantification is Needed Now’ (Saltelli

et al. 2021), a working paper of the UCL Institute for Innovation and Public Purpose, Saltelli et al. make the case that the current times are particularly promising, and desperate, to think more critically about quantification. The authors argue that the massive mobilisation of numbers for driving COVID-19 policy was irresponsible in light of the scarce amount of reliable data (Saltelli et al. 2021, p. 482), and that 'rather than using models to inform their understanding, political rivals often brandish them to support predetermined agendas', or to 'offload accountability to models of their choosing' (Saltelli et al. 2021, p. 483). The authors also reference a 'statistics war' which is currently raging in expert communities and in which 'statisticians themselves are at the forefront of solving deep ambiguity in the use or abuse of statistical inference' (Saltelli et al. 2021, p. 2; see also Gelman 2019). Perhaps the most visible, although hardly publicly known outcome of this 'war' was a petition signed by 800 statisticians, calling for the abolition of the notion of statistical significance for its insufficiency and potential for abuse (Amrhein, Greenland, and McShane 2019).

Saltelli et al. observe that 'the clamour for numeroethics comes primarily from the inside - and the closer to numbers, the louder it is [...]' (Saltelli et al. 2021, p. 3). Drawing on the French 'statactivism' movement to some extent (Bruno, Didier, and Prévieux 2014), Saltelli et al. propose the establishment of an observatory which postulates standards of transparency and diversity for quantification (Saltelli et al. 2021, p. 1). The ethics of quantification thus conceived would investigate the societal relevance of numbers and promote vigilance about their spoken and unspoken framings and assumptions (Saltelli et al. 2021). The call is thus not one to return to a world without numbers but rather a 'defence against its excesses' (Saltelli et al. 2021, p. 2) in a process of maturation and empowerment. While the call for an ethics of quantification successfully highlights the moral dimensions and perils, the EoQ exists so far only in the form of several schematic sketches which outline some important concerns (Espeland and Stevens 2008; Islam 2021), its purposes (Saltelli and Fiore 2020), and above all work out characteristics and social dynamics of numbers (see for example Espeland and Yung 2019). Before the project of an EoQ gains more traction, it is important to reflect on some of the perils that it needs to avoid in order to become the powerful theoretical construct it could be. I tease out several problematic tendencies in the following, also drawing on similar projects, notably incorporating my own experience with the ethics of algorithms.

The past few years have seen a veritable explosion of 'ethics of ...' ventures.¹ Moreover, the term 'ethics' has entered everyday language use, such as in talk of 'unethical behaviour' or 'ethically sourced material'. The Oxford University Career Service even runs a workshop with the title 'The Only Way is Ethics', committed to building skills for a career which makes positive social change. The more the word is used, however, the less it seems to mean. 'Ethics' is on its way to become an empty signifier (Bröckling 2014), much like 'sustainability', 'diversity', 'inclusion', and 'feminism' before it, which are used in wildly

different, sometimes contradictory ways by different people. A danger that lurks in this increasingly softened and meaningless notion of ethics is that its corresponding adjective 'ethical' can deteriorate into a convenient label to be pasted onto projects, products, or services. As consumers we already navigate a forest of labels where seals such as 'fair', 'climate-neutral', 'family friendly', 'green', 'eco', or 'digital' purport to offer quick and reliable help for decision-making – often at the cost of critical and independent thinking. The perpetual confusion between ethics and morality aside (the former is the intellectual realm engaging with questions of the latter), any ethics of... must be wary not to degenerate into an exercise of labelling which pre-empts a deeper engagement with moral questions.

Apart from the watering down of ethics, another problem with ethics of... has been highlighted by Andrea Saltelli (2021), namely that the area is populated with lobbyists. In Germany, for instance, one of the authoritative voices on the ethics of algorithms is a foundation which is part of a corporate group with a highly successful subsidiary offering global IT solutions. Amongst other things, this latter company works closely with Facebook, for example providing those precarious workers who peruse uploaded content for graphic material, and houses one of the most widely used algorithmic credit-scoring systems. If a think tank with such vested interests becomes a major contributor to the discourse around the morality of algorithms, and notably counsels the German Bundestag enquiry commission on artificial intelligence, then something is seriously amiss. Attempts by lobbyists to contribute heavily to ethics of... projects can be interpreted not only as white-washing, but above all as dominating and defusing a discourse which could heavily impede on their businesses. With the power and vast scope of quantification, the EoQ project is sure to attract attention from a variety of actors if it is to gain momentum, and it is vital to ensure that it does not fall into the wrong hands.

An additional issue, common to many ethics of... schemes is their relative vagueness. After all, how *does* one create 'an ethics'? What is the intended product or outcome? In many projects, the result is a set of guidelines or quality criteria to be applied to the technology in question. Such tendencies are currently also discernable for the EoQ (see for example Saltelli 2020). At least three problems are associated with this 'rulebook' approach. Firstly, given the wide range of applications of each of these technologies, the rules which aim to govern them often become too general to be of much use. It seems one could sum up many a quality criteria compendium in Google's infamous, though now dropped, dictum 'Don't be evil'. This is hardly effective or appropriate. What is missing is a nuanced discussion of the technology's different uses and the moral issues at stake in a variety of contexts. In other words, a bottom-up approach starting from concrete case studies is more likely to generate insights of relevance than the top-down development of broad sweep principles to cover everything. This is especially important for an EoQ given the great variety in quantification, ranging from grades to global health metrics to tennis world rankings.

Secondly, it can be observed that two quality criteria in particular are called for *ad nauseam*: objectivity and transparency. Whether the concern is with AI, algorithms, big data, or quantification, the two notions are bound to be some of the first desirable items of an ethics of... which everyone seems to agree upon. The reasoning behind this is rather simple. Taking the example of algorithms, an algorithmic system is deemed morally better if it is not biased, for example in allocating students to universities. If the system performs its task objectively, so the argument goes, it will not discriminate and thus contingently make morally good, decisions. Whilst objectivity is certainly not insignificant, the ideal of its complete achievement is rather unrealistic – no matter if the addressee is a human or a machine – which is why leaning heavily onto the concept for an ethics of... is rather unattractive. Transparency, on the other hand, is usually called for in order to enable a public debate about the assumptions and biases embedded in a particular algorithmic system. Those responsible are urged to lay open their code and data so that society may peer inside the machine and critique it. While transparency too has its justification and can allow for moral discussions to ensue, it is important to remember that it is itself not a moral concept. Making something more transparent does not entail making it better. What is more, the concept of transparency can even be mobilised to deliberately obstruct critique. As Pelkmans points out it in his work on Christian proselytising in Kyrgyzstan, ‘to make an object transparent implies that its internal features become better visible. It also means that the surface of that same object becomes less discernible’ and as a result, ‘the current preoccupation with transparency allows certain ideological movements to hide controversial agendas from public scrutiny’ (2009, p. 423).

The quantification literature has traditionally been critical of the notion of objectivity, often with reference to Daston’s and Galison’s work (2007) but the calls for transparency are now also appearing in relation to an EoQ (see for example Saltelli 2020, p. 7). The case of grading can help to appreciate the limited power of both notions. In educational circles, standardised testing is frequently hailed as the saviour to redress the ills of grading, precisely because it promises to be (more) objective and (more) transparent. However, none of the effects discussed so far in this book, namely on visibility, identity, merit, discipline, and credibility, would be positively affected by a shift from grading to standardised testing, precisely because the two share their quantificational nature. Objectivity and transparency should therefore not be relied upon to constitute the core of an EoQ.

Thirdly, and this concerns the specific endeavour to develop an EoQ, it appears that the debate is somewhat stuck. To be clear, social scientists in the past decade have achieved tremendous successes in fostering a better understanding of the (social) effects of quantification. They have provided more nuance and depth to the public perception of numbers which had hitherto, in the age of big data, been characterised by unbroken optimism and sometimes quasi-mythical elevation. The concept of numbers as a representation of truth, devoid of human shortcomings has been complemented by a more cautious

understanding of this particular technology, acknowledging its unique power but also attesting to its inherent flaws and potential for abuse. Put differently, social scientists have provided ample legitimisation for an EoQ. Especially the past few years have, moreover, seen impactful writings not only on why an EoQ is needed but also on what it should do (Espeland and Yung 2019; Islam 2021; Saltelli 2020; Saltelli et al. 2020, 2021; Saltelli and Fiore 2020). What is still largely missing, however, is a clear idea of *how* this should be done. Again, the question is how one can go about fashioning ‘an ethics’ and what it should look like.

The remainder of this chapter is dedicated to contributing to the project in several ways. While the existing scholarship has largely depicted the possible harms of quantification on a societal level, I sum up those which directly affect the bearers of numbers. Based on this, I propose two concepts – objectification and judgement – which could form the backbone of a theory of the wrongfulness of quantifying humans. I then endeavour to move the debate forwards by offering two concrete philosophical approaches to an EoQ, rooted in the ethnographic fieldwork. I suggest a virtue-based approach for dealing with the question of quantifying well, and a rights-based approach for tackling the issue of not quantifying at all. Overall, my thoughts are based on the premise that an ethics of quantification cannot be a single thing – a treatise, a catalogue of quality criteria or a checklist. It should instead ideally develop into a field of research in which social scientists and philosophers combine their strengths. Perhaps a good analogy is that of our understanding of discrimination. This concept has inspired a whole field of research to which scholars from a wide range of disciplines contribute. In addition to a strong philosophical base, there exists ample empirical documentation of the different forms it can take. Lay people have at least a rough understanding of what discrimination entails and there exists both a societal interest in and legal pathways for combating it, for instance in job applications. If the EoQ could approximate the field of discrimination in these respects, much would be won. On the way to this, we have much to learn from those who are being quantified routinely and I therefore begin with outlining several of the harms they suffer.

The harms and wrongfulness of quantification

Before an ethics of quantification is developed, a compelling case should be made for its necessity; scholars must therefore show that its object, quantification, has a moral dimension so that it makes sense to apply ethical thinking to it. As was already attested to in the beginning of this chapter, the past 10 years of research on quantification in the social sciences have highlighted the need for an EoQ by illustrating a range of harms that numbers can bring about. This work was much needed to redress the long-standing image of quantification as neutral and simply effective or ineffective, and to show that it can impact the social world in morally salient ways. Some of the examples which scholars have drawn attention to are deceit with statistics (see for example Bruno et al.

2014), unfair distribution based on metrics (see for example Adams 2016), or numbers as a tool for surveillance and governance (see for example Zuboff 2019). Most of these valuable insights are, however, discussed at the level of communities or societies. While this commendably underscores the scale of the repercussions of quantification, I have hoped to add a further perspective by detailing a range of effects on the individual, the bearer of numbers. These harms of being quantified will be briefly revisited in the following to lend further support to the claim that quantification is a moral issue and that an EoQ is therefore sensible. I then suggest two overarching concepts for understanding the possible wrongfulness of quantifying humans, to be developed in further work.

Quantification, by way of commensuration, introduces a scale to each social context it is applied in, along which entities are definitively sorted from high to low, from best to worst. The example of grading shows that where human performance is subjected to quantification, this creates the successful, the failing, and the mediocre individual. Numbers not only bring these clearly delineated groups into existence but also cast their members into the light of the public. By establishing involuntary *visibility*, quantification exposes the high and low performers while at the same time leaving the mediocre hidden in plain sight. Those living under conditions characterised by being quantified have little possibility to escape the light or to present a public image of themselves which is not supported by numerical 'evidence'. Being quantified also has important implications for the bearers' *self-image*. Given the nature of my fieldwork, I focused particularly on those with 'bad' numbers and showed that while they draw on a range of strategies to resist passive identification with their numbers, the latter nevertheless cause a strong sense of, in this case, cognitive and overall inferiority. There is reason to believe that also those in the middle range, as well as high performers, identify with their quantified ascriptions, but the specifics are best left to be explored in more detail in other ethnographic contexts where these types of students are more common. It stands to reason, however, that the power of numbers to figure centrally in definitions of self is a general phenomenon. Closely tied in with the notion of identity is that of *merit*. Quantification, when applied to human performance, with its inherent ranking not only suggests a reading of individuals on the spectrum from 'good' to 'bad' or from 'successful' to 'failing' but also along the lines of 'deserving' and 'undeserving'. The quantification of humans thus strongly supports the meritocratic political ideal at the expense of more egalitarian philosophies upholding the equal worth and dignity of all. The fact that especially those students with low marks most fiercely defended the 'rule of the best' lends support to Peter Herdegen's claim that grades serve to prepare those of the lower strata of society for later failure in a type of 'cooling out' which heightens acceptance of injustice and a low social status later on (2008, pp. 12,16). Two striking findings of my fieldwork, namely that students largely want to be graded and usually blame themselves for failure, underscore classically

meritocratic notions of purported 'fairness' and the imperative of 'betterment'. These dynamics, I take it, are of relevance beyond grading and also for other social uses of quantification.

That numbers are frequently used to enact social control is an insight corroborated by work in the thematic field of 'governing by numbers' (see for example Miller 2001; Shore and Wright 2015). My ethnography supports this finding and shows that the effectiveness of quantification in the *disciplinary* toolkit partly stems from its versatility. As a single technology which can embody both gratification and punishment, quantification is used to encourage or deter certain kinds of behaviour. The options for non-compliance are severely limited in such a quantificational regime, but gaming constitutes a common form of soft resistance. Engaging closely with the experiences of those on the receiving end of numbers also highlights an often overlooked visceral dimension of being quantified. Stories of what it feels like, literally, can foster empathy and throw into relief how early in life conditioned responses towards 'good' and 'bad' numbers become ingrained. Where numbers are thought of or treated as facts, the McNamara fallacy skulks, leading a variety of actors in a quantificational regime to believe that numerical information is all one needs on a given issue, thereby devaluing other sources of potential knowledge. If humans are the subject matter being quantified, then it is particularly their testimony which is at risk of being dismissed. *Testimonial injustice* thus occurs whenever a speaker's word is devalued precisely because it is not supported by numerical evidence, or is in direct conflict with it. My fieldwork suggests that the bearers of numbers who inhabit a social space which emphasises the quantified, at least in practical terms, exhibit two possible responses. A common choice, amongst those who have the respective option available to them, is to adapt fully to the demands of 'the system' in order to get their numbers right, whereas a reaction which spans the whole performance spectrum is a pronounced sense of powerlessness towards that very system.

Working out the harms of quantifying humans is a vital justificatory step for an EoQ but it is not sufficient on its own. What also needs to be addressed is why we should care, morally speaking, about the effects just described. Why should we be bothered by the inescapable visibility imposed on the quantified? Why does it matter if people are governed by numbers or their self-image is shaped by them? Put differently, an EoQ needs as its foundation not only an analysis of the *harms* of quantifying humans, but also of the exercise's *wrongfulness*. Developing a full theory of the potential wrongfulness of quantifying humans is a central task for the future but ethnographic work on grading can help us to identify two promising concepts for this undertaking: judgement and objectification. I will briefly describe these in turn below and outline their salience for an EoQ.

Throughout my fieldwork, I watched many of the students exhibit anxiety and distress in tribunal situations, while waiting for a verdict when receiving an exam back, or on results day. A term that frequently came to my mind on

these occasions was 'judgement day'. It is quite striking that the term 'judgement', even though so seemingly obvious, is conspicuously absent, or perhaps carefully avoided, in the official discourse around grading in education. In ministerial documents or training material for teachers, a wide range of synonyms is instead drawn upon, including assessment, evaluation, feedback, criticism, or review. The same is true with regards to quantification more generally, where it would be unusual to hear that a given metric is used to 'judge' those who are issued with it. Two of the effects of grading described in this book are particularly well interpreted through the lens of judgement. Firstly, one could make the case that the identity-defining power of grades is a matter of students internalising the judgement that they have experienced, and making it central to their sense of self. Secondly, arguments about merit and what someone deserves can also be understood as being about who is adjudged worthy of certain social privileges and who is not.

The second concept which could occupy a pivotal place in justifying an EoQ is objectification. As discussed in [Chapter 8](#), Miranda Fricker puts forward a compelling argument that the wrongfulness of epistemic injustice partly lies in the fact that it objectifies its victims. Those who receive unduly little credibility are denied the full human status as a knower and are reduced from an informant to a mere source of information – an object, rather than a subject. Quantification, it seems, not only objectifies by causing epistemic injustice, but also by its very nature. Putting a number to a human being means to commensurate them, that is to reduce them – at least with respect to the metric at hand – to one dimension. The individual becomes an entity on a scale, to be definitively compared to other such entities. Ranking in this commensurative sense operates in much the same way for institutions (for example university rankings), and products or services (for example star reviews) which are rated, reviewed or classified for easy consumption. That quantification entails objectification is buttressed by several of the ethnographic findings. The dehumanising tendency of epistemic injustice, which was observable towards the graded, was already mentioned. Visibility constitutes a further piece of evidence. The quantified individual who is cast into the light by virtue of their numbers is hardly able to redress this and to recede into the shade of privacy. The quantified are denied the fundamentally human capacity to hide certain aspects of their life or to self-represent, and are instead put on display. As such they can be used freely by others as a marker to compare oneself to. The link between quantification and objectification is still more evident in the case of discipline. The envisaged ultimate ideal of disciplinary techniques is the docile body which fulfils orders and is, metaphorically speaking, little more than a cog in a machine. As such, the disciplined are robbed of their agency and more resembling a useful object than an empowered subject. Where numbers are used explicitly to discipline and govern, objectification is thus not far. An impending challenge for an EoQ is to explore if and under which conditions the quantification of human behaviour, performance or characteristics constitutes judgement or objectification, and whether there is reason to take issue with this, morally.

Concrete approaches to an ethics of quantification

So far in this chapter, I have discussed some of the pitfalls an EoQ should avoid, and I have suggested that both describing the harms and formalising the wrongfulness of quantifying humans are required to place the project on a strong foundation. It is now time to ponder some of the aspects which could constitute the core of an EoQ. What could be its concrete guiding principles? Throughout my fieldwork, it became clear that studying the example of grades has much to offer in this regard, as did my interlocutors, given their daily experience of being quantified. I offer a short note on different groups of addressees before I consider both a virtue-based and a rights-based approach to the ethics of quantification.

Addressees

An issue which haunts ethics of algorithms projects is who should be addressed with the final product. Identifying those who are responsible for an algorithmic system is not straightforward, in light of the involvement of many stakeholders, including contractees, programmers, UX/UI designers, implementers, and users. Similarly, the current proposals for an EoQ do not differentiate clearly between the groups of possible addressees. An ethnography of grading throws into relief at least three kinds of actors involved in quantification. There are the producers (in this case teachers), the consumers (that is, parents, peers, admissions, employers), and the bearers (that is, students). This triad can be discerned in most other uses of social quantification too and it serves to remember that most of us belong to all of these groups in daily life. We all produce numbers when we judge the quality of films, products, or restaurants with stars, or when we select a smiley to rate our experience with airport security. We also consume the results of these kinds of exercises when we consult scores of GPs, base our dietary decisions on the Nutri-Score, or our investments on ratings. Lastly, all of us are bearers of numbers too – be it of our own grades, height, salary, age, or metrics concerned with the quality or quantity of our work. The example of grading helps to appreciate the different standpoints of the actors involved in quantification and can serve as a reminder to be clear about who is addressed with a specific moral demand.

Of robots and angels – handling quantification virtuously

In my interviews with pupils, I never asked moral questions such as ‘Do you think grading is OK?’ for I feared that this would enforce a kind of thinking which my interlocutors might not have developed themselves. My conversations with the children and adolescents were, however, infused with moral

thinking nonetheless. As most of the students explicitly wanted to be graded, their ideas often related not so much to the morality of quantification *per se* but rather to the question of handling quantification *morally well*. As I will show, their musings can be analysed effectively through the lens of virtue which constitutes a promising philosophical approach to the ethics of quantification.

Virtue has become a prominent notion in both normative ethics and epistemology. The concept is often traced back to Aristotle's *Nicomachean Ethics*, a collection of texts devoted to the question of how we should live. Aristotle concerns himself with the successful life, with 'flourishing' (*eudaimonia*), and argues that it can be achieved partly through virtuous action (Athanassoulis 2013, p. 55). Virtues are here understood as stable character traits, disposing one to act in a morally excellent way in relevant circumstances (2013, p. 57). Aristotle's conception of *eudaimonia* is of course far more detailed than can be discussed here, and it has received substantial criticism for being elitist² and egoistic, directed only at the moral agent's own flourishing. In contemporary ethics, however, the notion of virtue has been revived and refined and virtue ethics now constitutes a buoyant branch of philosophical work, as well as an alternative to consequentialism and deontology. Virtue ethics today generally stresses the importance of character, the kind of person you are, as opposed to someone who merely acts right (Annas 2005, p. 517). Some examples of the many virtues which have been explored in this line of work include courage, kindness, responsibility, compassion, and benevolence (see for example Hursthouse 1991; Nihlén Fahlquist 2019). Virtues are now no longer evoked only in relation to morality but also in epistemology, where they are discussed as central to the pursuit of knowledge. Some of the intellectual, or epistemic, virtues include open-mindedness, patience, curiosity, diligence, and conscientiousness (Lahroodi 2007, p. 283; Zagzebski 1996, p. 114).

As I already argued, it is important for an EoQ to clearly state who the intended recipient of any given moral imperative is. With regards to the virtuous handling of quantification, my research participants mainly had the producers of numbers, that is their teachers, in mind. Two opposing views on desirable virtues in the grader could be discerned and these were epitomised in imaginaries of the perfect judge: robots and angels. In an interview with the 14-year-old Daniel, he expressed frustration at the way in which he thought many of his teachers graded oral participation. He felt that teachers often made up these grades from memory and thereby made mistakes. He added: 'I also think if you'd sit down a robot in the place of the teacher it would be much better. They'd do everything honestly, you now. Some [grades] are just made on mood.' I often asked students in the interviews how they themselves would grade if they were a teacher, and I added the two ends of the spectrum: 'Strict or generous?' One group of pupils, diverse with relation to their own performance level, answered along the lines of Daniel.

I think it's very hard to see this totally objectively [...]. I would try to judge it like it really is [...]. I wouldn't give anyone who hasn't

deserved it a better grade. I think what you've delivered in terms of performance (*Leistung*), that's how it should be. Not better and not worse. (Maria, 18)

Fair. (Jonas, 14)

I think I wouldn't be generous. Because that's often undeserved [...]. But I wouldn't grade *so* strictly either but rather I'd bring everything in – all the tests, exams, participation and everything. (Julia, 18)

As can be seen from these exemplary replies, most of the students in this group rejected pure strictness and instead referenced a different range of virtues for graders. They alluded to fairness, being balanced and holistic in one's judgement, and to what [Daston and Galison \(2007\)](#) call, reminding us of Daniel's robot teacher, 'mechanical objectivity' which seeks to remove all traces of human subjectivity. The virtues referenced might seem, at first sight, mainly epistemic in nature, committed to representing the truth about a given student's performance. However, a closer look reveals that my interlocutors also advanced moral arguments, drawing on effects of quantification already discussed. In both Maria's and Julia's statements, the ultimate concern of virtuous grading is to ensure desert: the producers of numbers should thus be judging on merit and merit alone. Daniel, on the other hand, thought that the risk of epistemic injustice was the reason why teachers should grade virtuously:

I'd wish that teachers wrote it [oral participation grades] down directly [after each lesson] and that teachers were much more honest. Because teachers are automatically believed more than students. In my opinion.

What was also striking about this set of students was that many of them thought that better grading called for more or finer grading. This already shines through Daniel's quote above and it was rather evocatively stated by Julia, who argued that merely marking school performance was not enough.

I'm generally not convinced of grading, you know, in subjects. In addition, there should be the evaluation by our teachers of our personality. So that one doesn't just grade knowledge but the human itself [...]. The conduct of the students, timeliness for example, should be graded.

A second group of students, also from across the performance spectrum, wished for an entirely different set of virtues in those quantifying them. The envisaged ideal was captured by Sonia when she argued, with desperation in her voice, that grades could determine one's life. She added: 'I find that ... that's somehow sad because in the end it's just humans who have judged you. I mean, I don't want to say that angels should judge you or so (laughs). But yes, that's how it is.' Miriam did not specify how she thought an angel would

arrive at a verdict but the fact that she went on to lament harsh grading which ruthlessly adheres to the regulations and expects perfection suggests that 'angelic' judgement is by contrast merciful and mild. Several other students also reasoned in this way. Dennis, 11, said that he longed for teachers to be less strict in marking so that students would not have such a 'guilty conscience'. In response to the question of how they themselves would award grades as a teacher, I received several similar answers from other students.

Generously. Then I'd be a nice teacher [...] and the students wouldn't be scared. (Lena, 11)

I think I'd rather judge generously. They [the students] would probably be glad. And then I'd be glad [laughs] You're building sympathy with the teacher too that way and that's quite good. (Teresa, 18)

Definitely generously. I wouldn't want to put rocks on people's road in life. (Malte, 18)

Honestly, I suppose I'd give grades that are somewhat better than they actually are [...]. I think if the grades are a bit better than you expect ... say you have a 4- but you get a 4 ... the students would be happier. And that would make me happier too. (Enes, 20)

The virtues alluded to here, such as generosity, benevolence, lenience, and altruism, are clearly in contrast with those in the first set. They are crucially not epistemic virtues concerned with the most realistic depiction of the naked 'truth' about a student's performance but are rather moral virtues conjured up in relation to a concept of the good life, one in which people are happy, not plagued by a guilty conscience and where those quantifying exhibit an overall virtuous character ('I'd be a nice teacher'). Quite in contrast to the robotic technique of quantification, the angelic way called for less or less detailed grading for some. Jarek, for instance, argued that in the interest of students, the German grading scale should be made rougher. Getting rid of pluses and minuses would allow students not to fret over minute deviations but to instead focus on what was good about their performance.

Even though my interlocutors did not talk about this at any length, a virtue-based approach to quantification cannot only be applied to the producers of numbers, but also to the two other groups of addressees of an EoQ. Espeland and Stevens, as well as Saltelli urge us to recognise the limits, implicit biases and assumptions of quantification as we *consume* numbers. For Saltelli, the envisaged ideal is how we treat weather forecasts – harnessing their predictive strengths but also remaining aware of their inherent uncertainties and imperfection (2020, p. 483). Thereby, a range of, particularly epistemic, virtues can be made out in current calls for an EoQ – such as humility, critical thinking, and caution (Espeland and Yung 2019; Saltelli 2020; Saltelli and Fiore 2020).

If the consumers of grades, rankings or statistics were to enact some of these virtues certainly much would be won to counteract the prevalent uncritical 'numbers as facts attitude'. The third group of addressees, the bearers of numbers, could also be accommodated for in a virtue-based EoQ. The 11-year-old Emma, for instance, stated that it was important not to let low grades get to you and to develop a thick skin and 'be strong', pointing to virtues such as resilience and self-reliance. Several other pupils saw a danger in receiving too many good grades, for they feared they could make one feel as if one was 'better than everyone else'. Thus, for the bearers of particularly high numbers, humility and honesty towards oneself could be advocated for.

A virtue-based approach to an EoQ has many advantages. Firstly, it starts from the acknowledgement that all of us are currently inhabiting a quantified social world in which we produce, consume, and bear numbers, and it offers guidance for navigating and improving this reality. By striving towards moral as well as epistemic ideals, some of the harms of quantification could surely be softened. Secondly, quantification is a technology which engages a range of actors in an astonishing variety of contexts. Virtue ethics recognises this complexity by not purporting to offer hard and fast rules for how to behave. In other words, it does not promise to be an easy manual for acting rightly (Annas 2005, p. 524) and does not claim that moral decisions are themselves a matter of calculation, as utilitarianism would have us think. The ideal of a virtue rather becomes the guiding line and helps one to remember that honesty, fairness, generosity, and critical thinking *do* count in a quantificational regime.

However, relying on virtues alone is not sufficient for an EoQ and doing so would lead to predictable problematic upshots. There can, for one, be a great deal of disagreement as to what constitutes the 'right' virtues to be enacted by moral agents. In relation to quantification, complete objectivity and benevolence are, for example, clearly mutually exclusive. Most importantly, the virtue-approach does not call for systematic change but instead places the responsibility entirely onto the individuals in an existing quantificational framework. Those who handle numbers, in one way or another, are called upon to counteract its harms by virtuous conduct alone. As philosophers in virtue ethics have stressed, virtues are not simply a matter of choice and instant change but rather of slow character building which needs time and support (Athanasoulis 2013, pp. 42–45). Annas underscores that moral learning from others is required as much as thinking on one's own later on (2005, p. 517) and that developing a virtuous character means striving towards an ideal which will never be fully realised. After all, we are just humans, to recall Sonia's statement. Where the systemic situation and institutional ethics remain unchanged, the onus is entirely on the individual. This poses the risk of a split narrative. If institutions, such as the school, heavily quantify their attendants with known harmful effects and yet everyone involved must handle numbers 'ethically', the way for cynicism is paved. As my ethnographic work shows, particularly of the bearers of numbers it is too much to ask to detach themselves emotionally from the objectification and judgement involved and to answer with unflinching

‘grit’, ‘resilience’, or ‘modesty’. Much as has been observed in relation to precarity in academia and its oft-enforced narrative of optimism, there is cruelty in being asked to offset adverse living conditions through sheer character work (McKenzie 2021, p. 11).

Not quantifying: a rights-based approach

On the occasion of a follow-up visit to the school, I got into a long conversation with the head teacher who was keen to find out what the results of my fieldwork were. We talked about the different effects that grades had on the students and how these were related to quantification. Finally, I brought up the ethics of quantification, presented the virtue theoretical argument and said that I was concerned it might degenerate into yet another labelling exercise along the lines of ‘we quantify ethically’. Mr Becker listened, waited for a while after I had finished and then uttered: ‘But may I say something Miss Rohde? It’s not about quantifying well. We have to do away with it altogether.’ He reiterated what he had also said in an interview:

After so many years in education, I don’t think much of grades. We should delete them without substitution. I have always been in favour of a free estimation of performances and in the end of the student personality that is behind them: ‘On the basis of what you were able to do so far, you have developed very well’, ‘Once you have set yourself a goal, you pursue it single-mindedly’, ‘You’re the one who keeps going when everyone else can no longer be bothered.’

When I questioned Mr Becker about the practical problem of university admission in this scenario, he was quick to answer.

I think all places on university courses, especially on those in high demand, should be given away in a lottery. I take this to be the fairest way. Like a greencard lottery. The Abitur, for me, is a university entrance qualification (*Hochschulzugangsberechtigung*), an entitlement to study (*Studienberechtigung*). I’d see it like a driver’s licence – if I pass it, I may drive. If I pass the Abitur, I may go to university [...]. Everything else just leads to social segregation and the absurdity of this scramble for university places in medicine, when a tenth of a grade decides if you can become a doctor or have to remain ‘just’ a nurse.

Some might consider Mr Becker’s solution as too radical to ever find public support but it mirrors an important point in the debate around the ethics of quantification – the issue of *not* quantifying. A virtue-theoretical approach can improve an existing system but it does not address what is often the root cause

of harm, namely the quantification (of humans) in the first place. Even though Andrea Saltelli briefly mentions a ‘license not-to-quantify’ in one of his proposals for an EoQ (2020, p. 6), and Gazi Islam also acknowledges its importance (2021), the issue is not yet explored systematically in current scholarly discourse. If this is not redressed, there is the risk of falling prey to the same deflation as many other ethics of... which favour policy over politics, voluntary agreements over regulation. For a more lasting impact, an EoQ needs solid theory, not only on the harms and wrongfulness of quantification, and on quantifying well, but also on a possible moral imperative to not quantify. A promising route I map out here is a rights-based approach. Further work in the EoQ should explore whether the case can be made for a right not to be quantified and under which conditions it should apply. In the following, I begin by exploring three baser rights from which this could be derived: the right not to know, the right not to be judged, and the right not to be commensurated.

The right not to know

A certain ritual was oft repeated throughout my year in the field, particularly in the lower classes. In the days and weeks after an exam had been written in a given subject, whenever the respective teacher would enter the classroom, someone called ‘Do you have the exam with you?’ In the suspenseful pause that followed, I frequently heard the same kind of statement repeated from many of the students: ‘I don’t even want to know what I got.’ Whenever the teacher announced that they had not yet marked the papers, a collective sigh of relief was emitted, leaving only a few disappointed students who had high hopes for their result. Jarek, too, showed a tendency for avoidance. It was not clear to me just how he coped with the tension, but he chose not to collect the grade for his oral Abitur exam in German for over a week, until he was forced to look at it on his sheet of paper on results day.

Most of us avoid certain numbers, particularly if we fear they might not be all that flattering. We may be hesitant to take an intelligence test, we might not step on the scales³ or might not want to have our face scanned by an app which issues us with a beauty score⁴. The essence of this strategy is encapsulated in the English proverb ‘ignorance is bliss’. To say that this amounts to self-deception, irrationality or closing our eyes before ‘reality’ is not altogether fair, for there are good reasons in favour of avoiding certain, in fact many, numbers. The examples cited all have significant drawbacks. For instance, frequent body weighing blows minute variations out of proportion and can direct attention away from other, often more reliable sources of information, such as one’s bodily sensation. Metrics like grades or beauty and intelligence scores also make claims to this superior epistemic status, as I have shown, but there are additional reasons to sidestep them. Firstly, they can be deeply flawed. Where we are being quantified by other humans – as in the case of grades – the judge may be driven by a whole range of motives to issue a given number which may thus not be a true reflection

of our achievements. Even standardised scores which are generated automatically do of course come with a set of inbuilt assumptions and unavoidable biases, providing good reason to question the need to know them. Secondly, consuming 'our' numbers always carries the risk of taking them at face value, which can lead to stigmatisation, labelling, and self-fulfilling prophecies, the effects of which can last a lifetime.

We thus often draw on the 'ignorance is bliss' strategy as a way to guard our sometimes fragile self-image from the ruthlessness of numbers and their power to negate everything which contradicts them. Of course there is a fine line between those numbers we can safely avoid and those we should perhaps not, such as certain medical figures where there is reason for concern (blood pressure, heart rate and so on). In any case, there is value in this being a personal decision, and compulsory quantification, such as grading, which forces individuals to know their numbers, is at least morally questionable. The related task for an EoQ is to systematise these concerns and to investigate whether the case can be made for a right not to know; the right not to look at one's numbers. Especially with regards to those who, like children, have limited abilities to distance themselves from and question certain scores, this is of utmost importance.

The right not to be judged

I have argued that a potential reason for the wrongfulness of quantifying humans is that it constitutes judgement. As such, this poses a moral problem: Is it admissible for humans to judge others? One of my youngest research participants, the 11-year-old Valentin, was the only student to voice a strong opinion on this. I had asked him what he thought grades were for and he had replied that they were used for 'judging how one is' and then to 'judge which job one goes into.' I probed further by asking 'And how do you find it to be judged this way?', to which Valentin answered:

Actually ... you have to judge yourself. That's what I find. Because ... judging ... no other human can judge a human. A human is ... like a ... a human is a human. Everyone is different and you cannot judge someone. You have to judge yourself.

Valentin came from a family with a strong Baptist faith, so it is likely that his ideas stemmed from the Biblical notion of not condemning others – most well-known in the version 'He that is without sin among you, let him first cast a stone at her.' (John 8:7). An EoQ should probe this further: Is there a right not to be judged by others? If so, does this forbid quantifying humans altogether, or under which circumstances? Epistemology can lend a hand to ethics here and serve as a source of inspiration on the concept of non-judgement. The philosopher Jane Friedman argues that, in addition to the two well-known doxastic attitudes of belief and non-belief towards a proposition p , we can take a third stance, namely suspended judgement.

The latter is not equivalent to a ‘mere lack of opinion’ (2015, p. 2) on p but rather constitutes what Friedman calls ‘committed neutrality’ (2015). As she further argues, suspended judgement is crucial if one seeks to know more about a subject matter (Q), leading her to state that one is inquiring into Q if and only if one is suspended on the matter (2015, p. 1). A similar argument could be constructed in the ethical realm. If human beings are quantified and thereby judged, then this pre-empts the ‘inquiry, wondering [and] curiosity’ (2015, p. 16) which is not only pivotal for the pursuit of knowledge but also for paying respect to the complexity and multifaceted nature of each individual and the kind of ‘openness and sensitivity’ (2015, p. 1) which Friedman advocates for.

The right not to be commensurated

Valentin’s statement on judgement contained the sentence ‘Every human is different’. This hints at another salient issue, the last one to be discussed here: incommensurability. To recall, commensuration is the process of superimposing a common unit onto different entities in order to compare them with one another. As Espeland and Stevens put it, ‘commensuration transforms qualities into quantities, difference into magnitude.’ (1998, p. 316). In most cases, including grading, commensuration is part and parcel of quantification. The only exception are instances where quantification is merely used to label, such as with postcodes or the numbers on football players’ shirts. If something is understood as *incommensurable* this means that it either cannot or should not be measured and compared to other things. ‘An incommensurable category encompasses things that are defined as socially unique in a specific way: They are not to be expressed in terms of some other category of value.’ (1998, p. 326). It is this notion which gleams through Valentin’s critique of grading when he asserts the particularity of each human being.

That the notion of incommensurability could play a decisive role in an ethics of quantification is far from uncontroversial. The proponents of the stactivist movement, for example, state that it would be a tactical error to denounce quantification in favour of the incommensurable, of pure qualities and singularities (2014, p. 29). They claim that it would be a false move to join those ‘who reject them [statistics] outright and cry “No to quantophobia!”’, “No to numbers!”, “Yes to qualities!”’ (Bruno et al. 2014, p. 7). With special regards to statistics they advance the persuasive argument that to do so would be to leave a potent instrument in the hands of the powerful – the state and the capital (Bruno et al. 2014). To uphold the incommensurable would thus be idealistic in the face of reality and perhaps even amount to naiveté. The argument by Bruno, Didier, and Prévieux is well taken for the sector which they represent: activism. Their call to numerical arms, as it were, to fight back by creating countermeasures, new categories, and advancing social criticism supported by quantified evidence, represents a strong mode of resistance to

the existing regime of governing by numbers which they address. However, ethics goes beyond self-defence. Or rather, it starts earlier. Ethics can not only afford to but must be the stronghold of pure ideals, even if they are radical. As such, it cannot do away with the notion of incommensurability, for ‘the extension of commensuration into more spheres of life may make incommensurable categories more meaningful, their defence more necessary’ (Espeland and Stevens 1998, p. 327). The responsibility ahead for an EoQ is to ponder whether human beings constitute such a category and whether they have a corresponding right not to be commensurated. The close relation between quantification and objectification constitutes a promising starting point. Most people are abhorred by the thought of selling a child and thereby expressing its value in terms of money (Espeland and Stevens 1998, p. 328), and would be equally unwilling to rank their children from best to worst. Many also feel there is something uncomfortable about selling or having to sell one’s body, and the phrase ‘everyone has their price’ is rarely announced without moral reproach. All of these examples where the incommensurable is evoked directly or indirectly have in common that they have human beings at their centre. Reducing them to a single value fundamentally goes against the idea of priceless preciousness and uniqueness. By handling humans as objects whose value can be compared easily to other such objects, one dehumanises and fundamentally assaults them in their dignity in these examples. An EoQ can be a powerful tool to counteract this, for

just as commensuration is a considerable social accomplishment, so too the creation of incommensurables requires work. Some party must draw boundaries around the thing whose value is to be kept, or made, distinctive and then defend the boundaries from encroachment. (Espeland and Stevens 1998, p. 328).

Taken together, the three rights I have discussed may be used to construct a case for a right not to be quantified, a potentially significant constituent of an EoQ. Fashioning an ethics of quantification is an exciting project for the near future which, if done properly, has the potential to revolutionise how we think about numbers and the quantification of humans. The endeavour requires the sustained efforts of academics, and cross-fertilisation between the social sciences and humanities, combining a strong empirical grounding with bottom-up theory building and philosophical rigour – but the work is well worth it for a moral framework for quantification has never been needed more than today.

Notes

- ¹ Some examples include Ethics of Technology, Ethics of AI, Ethics of Digitalisation, Ethics of Information, Ethics of Algorithms, and Ethics of Big Data

- ² For instance, Aristotle argues that only those with a certain amount of money, reasonable looks and good ancestry and children can achieve eudaimonia (see for example [McInerny 2008](#)).
- ³ When I was packing my bags to leave University for the vacations during my doctorate, I asked my landlady, whom I was lodging with, if she possessed a pair of bathroom scales so that I could weigh my luggage. The slender, over 70-year-old lady replied with conviction and her cut-glass cadence: 'No, I don't. They only tell me lies.'
- ⁴ There are several such applications available, such as *Beauty Meter*, *Face + +* or *Beauty Score*. In her column for the Guardian, Arwa Mahdawi opens her article on these products with the words: 'Want to shatter your self-esteem in under five seconds? There's an app for that!' ([Mahdawi 2021](#))

Conclusion

There is something extraordinary about the school student's perspective. We all share it for many years of our lives, but once we graduate, it is irrevocably lost. Schools are institutions sealed off quite thoroughly from everyone except those who attend them or are employed there. Sitting in class every day, depending on teachers and being graded are all part of a childhood which cannot be relived – even though the mere thought of going back to school with its simultaneous joy and dread has provided the storyline for many a movie. Ethnography is a unique opportunity to re-enter the school world and to approximate the student perspective as best as possible. It is this very method which allows us to look at grades through the eyes of pupils again, enhanced by the epistemic privilege of no longer being measured by them ourselves.

In the educational literature, grades are primarily discussed as a form of assessment, and the question which figures centrally is whether or not they are conducive to learning. An ethnographic approach shows that this treatment is unduly narrow. Grades are at their heart a form of quantification, and in this capacity they affect students in ways that go far beyond educational assessment.

Firstly, grades make the intimate matters of success and failure accessible to a wide audience, subjecting students to the scrutiny and judgement of their teachers, parents, prospective employers and peers. Particularly those with remarkable numbers – high or low – are put into the spotlight and accorded with, sometimes unwanted, visibility. While students with average or mediocre results are no less visible, they are at risk of being rendered numerically irrelevant and sidelined in a context which is governed by numbers. Quantification can denude the individual and rob them of the vital opportunity to conceal information and to shape their own portrayal. When the use of calculative practices establishes a 'tyranny of light', it becomes impossible for the quantified to recede into the shade of privacy as a shelter from judgement.

Grades are also deeply personal. Even if students frequently assert an ability to detach themselves from their marks, the latter are in fact a key source of identity, especially with regards to the notion of intelligence. 'Bad' grades have a significant destructive potential and students invest much effort in keeping their effects at bay – be it by explaining low results away, by highlighting favourable marks, by fashioning an identity outside of schooling or even by engaging in self-deception. Notwithstanding these considerable exertions,

there is often a widespread feeling amongst students of being defined by their grades, at least in the realm of education which takes up a large portion of their young lives. Wherever personal numbers are thoroughly institutionalised and widely regarded as reliable indicators, they are likely to be read by those quantified as a reflection of their character or abilities. Quantification thus leaves little leeway for self-images that are not supported by numerical proof. The constant monitoring of mistakes in what should be a learning process effectively undermines vital self-belief and can lock individuals in a vicious cycle of avoidance and consequent failure – in other words creating a self-fulfilling prophecy.

Grading comes with ideological baggage, too, for it impresses onto students a strong link between performance and social worth. It is not so much education or *Bildung* which is portrayed as the vehicle towards a better life, but rather the measurable output of the hours spent in school. Through navigating the education system with its logic of classification from early childhood, students become acquainted with the idea that society is or ought to be hierarchically organised and that grades are a fair means of determining who should be assigned which position within it. Not only does this narrative obscure the significant impact of wealth and pedigree – rather than mere performance – on social status, it also leads disadvantaged students to anticipate and ultimately accept a lower social value for themselves. Quantification thus both mirrors and reinforces a meritocratic ideology, leaving little room for alternative ways of thinking about justice. While meritocracy holds the promise of social ascent through performance alone, it also entails the necessity of ranking everyone involved. As a result, competition becomes the predominant social mode, undermining mutual acknowledgement and support. If 'good' numbers are integral to ascent in a given system, be it an organisation or a society, then this can serve as a useful indicator for identifying an underlying meritocratic logic.

A common portrayal of grades is one as a mere monitoring device – a means for teachers and parents to keep track of their protégés' progress and a source of feedback for students. This reading both overlooks the above-mentioned ideological values embedded in grading and also fails to represent its widespread use as a disciplinary tool. Teachers can and do utilise marks to discourage dissident behaviour as much as to reward actions which align with their preferences or institutional rules. Being disciplined through grades therefore surely works on students' minds, or souls as Foucault would suggest. However, it is also an experience which affects the body. Students viscerally feel the peril of a pending judgement, the pain of a low mark, and the elation of a high score. They can recall these somatic sensations in detail which indicates that they are far from fleeting impressions but intense bodily feelings with a lasting impact. Quantification has long figured in the disciplinary toolkit of the school and also of other (total) institutions and the state, as the literature on 'governing by numbers' illustrates. The case of grades offers an opportunity to understand the lived experience of this phenomenon and

serves as an encouragement to pay attention to the visceral dimension of processes which at first sight may appear to be mere mind control.

In important institutional decision processes, grades act as a placeholder for the individual student. Progression from one school year to the next, the award of high school diplomas, or admission to university – in all of these instances, students are rarely heard and it is the grades which speak in their place; a dynamic which can be expected to gain further momentum by the increasing automation of these procedures. Even if individual actors within the education system might challenge the objectivity of grades, the latter are nevertheless handled as facts in practical terms. The high epistemic status that is thus accorded to marks creates unfavourable conditions for students to appeal them or in fact to make claims about themselves that contradict the numbers. Where numbers are treated as a marker for truth, they can discredit other sources of insight, particularly testimony. Under such conditions the bearers of numbers are at risk of being silenced and thus of losing their status as an empowered informant who can impart valuable insight, particularly about themselves.

In light of the UN's endeavour to have all children worldwide receive primary and secondary education ([United Nations 2021b](#)), being graded is an experience of a truly vast scope, affecting billions of young people now and for generations to come. Like any ethnographic research, the present study took place in a specific context. Apart from the obvious geographical situatedness, it was particularly the socio-economic background of my interlocutors which characterised the fieldsite. Most of the students, though not all of them, belonged to what are considered the lower realms of society, and this certainly textured their relation to school, including the role of grades therein. However, to assume that the effects of being graded are limited to a certain type of student would be drawing a hasty conclusion. To begin with, it is important to recognise a common tendency to equate low socio-economic status with educational underachievement. While it is true that my interlocutors often received 'bad' grades, there were also several high-performing students like Nayla and Jarek who had stellar marks but who were not exempt from the effects of grades that their peers experienced. There is also good reason to believe that the findings of the present research are not limited to students of a particular school form or social class. My own anecdotal evidence from schooling in the more prestigious Gymnasium suggests that they extend well beyond the comprehensive school, at least in Germany. Pursuing a PhD at the University of Oxford offered the additional opportunity to have many conversations about my project and its findings with successful and often wealthy students from all over the world. The impression I gained from these exchanges was that the issues of visibility, identity, merit, discipline, and credibility are close to universal phenomena. Robust scholarly work corroborates this assumption. Bittencourt's ethnographic writing on elite privately educated Ecuadorian pupils ([2021](#)), for instance, reflects many of the findings of my study. The pupils know of each other who is 'good' or 'bad' at school,

and they make these ascriptions part of their sense of self. Indeed, the very same notion of merit lingers in the hallways of an Ecuadorian college as in a German comprehensive school. All this is not to imply that there are no differences in the experience of being graded across contexts, and comparative work to explore variations and nuances is never futile. There might well be students who are largely unaffected by grading for whatever reason – however, the scope and systematicity of damage done to a great many pupils provides reason to think about the morality of grading.

At a college dinner in Oxford, I got into a long and captivating conversation with four Chinese engineering students. After I had told them about my project, they launched into tales of woe about their years in education – from wanting to live up to their parents' expectations to endless hours spent in cram schools, to immense pressure to perform in all-decisive exams. When we had said our goodbyes at the end of the evening, one of the young men turned around at the door, waved and called across the crowd 'Make some changes!' The same motif caught up with me in the fieldwork. Even if most of the students were in favour of being graded, there were some notable exceptions. Fourteen-year-old Daniel seemed to have a definite idea about where the research should lead as soon as we sat down for our first interview – but he was sceptical about the chances for success. He leaned back in his chair, squinted at me across the table and said 'Do you even have the power?' 'Excuse me?' I asked. 'Like, to change anything? Can you even do away with grades?' he specified. My hesitant explanation presumably made it abundantly clear that I did not, in fact, have any such power, for Daniel nodded silently and looked rather disillusioned. After an interview with Abitur student Leila, just when I had packed away my things, she added 'Someone like you is a salvation for us because someone has to take care of this. Someone has to send a letter to the ministry or give a talk. I'd do it but luckily you're doing it.'

Morally justifying grades is not an easy feat in light of the harm that they cause, but neither is advocating for their abolishment. As was discussed in [Chapter 2](#), critical scholarly work on grading has existed for decades and systematic reviews provide sound evidence that marks largely backfire – at least with regards to learning (see for example [Schinske and Tanner 2014](#)). And yet, in practical terms nothing has changed. Grades are still the centre piece of education, the be all and end all of examinations and the supreme marker of academic success, opening or closing social doors accordingly. In some countries, such as Germany, grading has even proliferated in response to international comparison via the PISA league table ([Grek 2009](#)). There seems to be little to no political interest in laying off grades or conversely a strong interest in keeping them in place – creating a rather striking clash with the existing empirical evidence. Not only on a political but also on a societal level the termination of grading finds little resonance. Deep-seated fears exist about a grade free school, to which the scenarios conjured up in informal conversations attest. Teachers, it seems, would have no authority, students would not be motivated to learn, they would be entirely in the dark about their abilities

and there would be no fair way to decide who gets to occupy the 'good' and the 'bad' positions in society. Reform schools are one example to dispel many of these myths but they remain curious and unworldly places to many, perhaps understandably so. Considering the dissolution of grades inevitably brings up the question of alternatives. This, too, is a challenging issue, but there are many scholars who have thought about it in great detail¹. What the ethnographic insights make apparent in any case is that the argument of standardised testing as a panacea to heal the ills of grading is deeply flawed. The scores derived from strictly rule-bound or automatic evaluation may mitigate the most superficial problems with grades, that is their lack of transparency and objectivity. However, standardised test scores and school marks share their quantificational nature, and the effects described in the previous pages are to be expected when replacing the latter technology with the former. If anything, the move to standardised testing will make matters worse, for the apersonal nature of their calculation gives them an even more pronounced factual flavour and leaves students with much less leeway to question or challenge their own numbers.

Replacing grades with informal conversations and short texts presents an interesting alternative. Numbers can be ripped out of context, aggregated, averaged, and compared – all of which is less easily done with textual information – which makes the latter more fitting to the diversity and complexity of human characters. Teachers often fear that text-based feedback would be far too time-consuming to produce but this line of argumentation overlooks the significant amount of bureaucratic effort which goes into grading. Frequent exams and tests have to be developed and set, marking sheets need to be drawn up and upon, the triangulation of grades across pupils is necessary to ensure intercohort consistency, meticulous note keeping, and databank management are required, and discussions or appeals are always looming. Writing two short paragraphs per student each year appears a feasible replacement. Moreover, such texts can be expected to contain more personalised and thus relevant feedback. And yet, simply exchanging grades for texts does not go deep enough. As the philosopher of education Robert Paul Wolff rightly pointed out, so long as some institutions and professions truly offer a competitive advantage in the scramble for wealth, prestige, and social security, there will always be more applicants than places. As a result, if report cards were replaced with references, these too would soon degenerate into 'discursive rankings' (Wolff 1969, p. 464). To reiterate the conclusion from [Chapter 6](#), 'only a social revolution of the most far-reaching sort' (Wolff 1969) could truly tackle the root cause of the conundrum. Assessment in education is inextricably enmeshed with and ultimately serves the hierarchical organisation of society. Before a society is ready to address questions of tremendous income discrepancies, of artificially introduced ladders of prestige and status, and the problematic notion of merit, rankings will always loom – within education as much as outside of it. These are discussions which self-proclaimed liberal democracies must lead but there is little point in waiting.

The Swiss journalist and author Rolf Dobelli once wrote about himself:

As a writer, I know exactly where I stand in the hierarchy of writers in each given moment. There are the weekly bestseller lists. There are the star ratings of readers on dozens of websites. There is the pyramid of literature prizes with the corresponding long- and shortlists. There is the ‘rating of intellectuals’ in *Cicero* [a German political magazine]. There is the current sales rank on Amazon. There are the online reviews – the songs of praise and the slatings. There are the likes and followers on social media. From second to second, I could watch my status as a writer transparently. If I cannot deal with this hypercomparativeness, I am in the wrong job (2019, p. 125, own translation).

Children cannot choose their ‘job’ as a pupil – a profession which in the vast majority of cases entails being graded. Bearing in mind that each grade essentially constitutes a judgement, being a pupil asks much of children. The students I met were faced with an extraordinary number of reminders of failure or conversely an overwhelming amount of performances to get right. And yet, children are not free to resign upon realising that they may not be able to cope with the effects of being quantified; with the visibility, the constant competition or the reduction to their numbers. Adults in society have a responsibility to protect children, not just their own, from systematic and institutional harm. To make the move away from grading is to save the young many years of unnecessary pain and pressure – the effects of which can last for a lifetime.

The future of quantification

Researching grades offers insights into what is presumably the first prolonged encounter of children with the numerical culture which has come to shape our social worlds. The quantification of human life is by now ubiquitous and can be expected to further gain in relevance. A great many examples could be drawn up to illustrate the ascendancy of numbers but there is arguably one case which demonstrates most evocatively what is at stake: social credit scoring. In China, the process of calculating citizens ‘trustworthiness’ or conformity with social rules is already well underway, but pilot projects operating on a similar logic have also been launched in Italy, Greece, and Sri Lanka (Fess 2022a, 2022b). Governmental foresight studies are generally a reliable means of discerning where a country is headed, politically speaking. If this rule of thumb continues to hold, then the future of Germany, too, appears disconcerting. In 2020, the German Ministry of Education and Research (BMBF) published a large study called ‘The Future of Values Held by People in our Country’, which it had commissioned with two private businesses (Prognos AG and Z_Punkt GmbH) in 2019 for a price of close to €300,000. Based partly on literature reviews, social media analyses and interviews with 22 designated

experts, the study presents six thinkable scenarios for the near future. The document is organised around the theme of values (*Werte*) but reads very much like a classical foresight study. Scenario number five is the so-called 'bonus point system'. In the 2030s, the scenario runs, the German government will introduce a voluntary digital system inspired by the Chinese social credit score with which citizens can collect points for behaviour deemed socially desirable. The examples cited for the latter are voluntary work, care for relatives, organ donation, old-age provision, good traffic behaviour, and a low personal CO₂-footprint. The points could then be traded in for a range of advantages, the only two named examples of which are privileged admission to certain university courses, and property ownership (BMBF 2020c, pp. 123,128). Private enterprises would also be able to tap into the system in order to reward their customers, for example with 'personalised risk premiums' (BMBF 2020c, p. 123). A few expectable debates around the system are addressed in the document, for example when it is predicted that critics will argue that the system is not truly voluntary because 'every bonus system is implicitly also a malus system' (BMBF 2020c, p. 128). It is also vaguely mentioned that the close enmeshment of the state and those private companies which provide the digital infrastructure will 'pose new challenges for data protection' (BMBF 2020c, p. 126). In a single sentence, it is moreover stated that critics will warn of individual freedom being unduly limited by the system (BMBF 2020c, p. 126) and the usual concern about transparency is addressed with the declaration that 'the auditability (*Nachvollziehbarkeit*) of the evaluating algorithm will be checked' (BMBF 2020c, p. 126, all own translations).

Overall, however, the bonus point system receives a disquietingly favourable treatment. The reader is assured that this particular tool 'from the authoritarian Chinese context will be adapted within a liberal-democratic system' (BMBF 2020c, p. 129). The process by which this transformation is to be achieved is labelled 'Digital Liquid Democracy' (BMBF 2020c, p. 123). While the details of this participative process are not disclosed, it is said to involve citizens bringing topics onto the agenda and voting about 'critical questions' (BMBF 2020c, p. 123). Solely the fundamental issue of whether or not to introduce the bonus point system in the first place seems to be removed from the democratic process for it is stated in the preamble of the document that 'after long and highly controversial debates, politicians in Germany decided to work with a central digital point system' (BMBF 2020c, p. 124). Furthermore, it is not clear how the allegedly participative nature of the system could be reconciled with statements to the effect that it would be primarily a political 'steering tool' (BMBF 2020c, p. 126) with which the state, rather than its citizens, can realise 'certain aims' (BMBF 2020c, p. 123). If one is to believe the commissioned study, the point system will have a truly remarkable power to resolve a range of problems such as social tensions following a predicted 'extreme population growth' (BMBF 2020c, p. 129) as well as online hate speech, in its capacity as a 'central element in the insemination of values' (BMBF 2020c, p. 129). Old norms, such as the school grade, are predicted to lose in importance, compared to the

unspecified 'new norms' embedded in the point system (BMBF 2020c, p. 129). Throughout the document it is stressed that while there may be controversies about details, the overwhelming majority of German citizens will be in favour of the system by the 2030s. As it is put in the scenario: 'The point system itself will only be questioned by a minority who will not see their position represented' (BMBF 2020c, p. 124). In other words, those opposed to being quantified are expected to be outnumbered.

The results presented in the preceding chapters make it evident that the all-encompassing quantification of humans by the state poses a serious danger. The reasons for concern go far beyond the rather superficial points acknowledged in the governmental study. Rather, the effects of being quantified which were presented in this book shine through the scenario described in the study. A bonus point system would make highly *visible* who is deemed an exemplary citizen and who fails to live up to the state's expectations. As it is expressed in the study, those opposed to the system and those left far behind with low points 'are more than ever social outsiders and have to struggle with stigmatisation and dismissal' (BMBF 2020c, p. 126). Numbers, especially those which are heavily institutionalised, can have a significant impact on *self-image* and it is to be expected that those with few points would be at risk of low self-esteem and experiencing feelings of failure or unworthiness. Also those with 'good' numbers can make the latter central to their self-perception. In the foresight study, it is for example stated that 'one's score becomes an expression of one's performance, success, and standard of living' (BMBF 2020c, p. 128). Closely connected to this is the fact that where individuals are quantified, they are also commensurated and thus put into a comparative relation with others. Any such ranking from high to low is almost inevitably understood as an indication of 'better' or 'worse' and ultimately of 'deserving' or 'undeserving'. In the ministerial document, it is predicted that the notions of performance and status will gain in importance (BMBF 2020c, p. 128) and that the point system will 'offer orientation and transparency with regards to one's own rank and chances of ascent' (BMBF 2020c, p. 126). Taken together with nurturing 'the belief that one's own ascent is possible' (BMBF 2020c, p. 126), a bonus point system would therefore strongly favour a *meritocratic* social order.

Rather than emphasising fundamental, unconditional, and unalienable civil rights, the focus is on earning such rights and freedoms by redeeming oneself in the eyes of the state through 'good' numbers. The great *disciplinary power* inherent in quantifying humans is also evident. The scenario depicted in the study provides ample evidence that a bonus point system could be used effectively to control the population through gratification and punishment. The system is repeatedly referred to as a 'steering tool' which would be used by the state to 'introduce new norms in daily life, step by step' (BMBF 2020c, p. 124). A striking description of the disciplinary dimension is also offered in the following statement: 'Besides the administrative interest in system conformity, there is mounting pressure to deliver performance in the interest of society' (BMBF 2020c, p. 128). The case of grades shows that numbers make

strong claims to facticity and can thus devalue other sources of information. Especially for the bearers of poor numbers, this often entails systematic *epistemic injustice*. It stands to reason that in a point system scenario, individuals with low scores would face severe difficulties in explaining these (away) and in making claims to self-descriptions which are not supported by their numbers. What is missing entirely from the foresight study is any discussion of the *ethics of quantification*. No allusions are made – not even in the form of predicted criticism – to the pivotal question of whether quantifying humans is morally defensible. Instead, as was already mentioned, the expectation is that the majority of citizens will welcome the new system.

It can, of course, not be said for certain whether the scenario depicted in the ministerial document will manifest into reality or by when – after all, it is just a prediction, as the Ministry and the government have adamantly stressed (Deutscher Bundestag 2021). The feeling which the reader is nonetheless instilled with is that the move towards a possible point system is a natural, almost inevitable one, also in light of the fact that the Chinese social credit score is no longer science fiction. What this evolutionary way of presentation effectively obscures is that a bonus point system will not manifest out of thin air. As Espeland and Stevens have shown, putting quantification into place requires much effort, even though this fact is often overlooked (2008, p. 411). A point system has to be actively developed and implemented by the state and calls for a gigantic digital infrastructure, designated algorithms, as well as social rules on behaviour, rewards, and punishments. It is worth pointing out that Anja Karliczek, the minister whose department commissioned the study in 2019, met the Chinese head of state, Xi Jinping, together with French president Emmanuel Macron in the same year, to intensify the relation with China as a partner in digital innovation (BMBF 2019). The very existence of a largely sympathetic foresight study on the issue is a political fact in its own right and leaves one to wonder how clear the boundaries are between prognosis and propaganda.

The entire study is peppered with ‘signals (in the present) for a possible realisation of the scenario’ (BMBF 2020c, p. 125) which, upon closer reading rather appear as a listing of conducive factors for societal acceptance of a bonus system. A 2019 study is cited, according to which one in five Germans are already in favour of a social credit score following the Chinese model, and a different poll is said to show that one in four wishes for the state to reward ‘good behaviour’ (BMBF 2020c, p. 125). The authors argue that the logic of point systems is now familiar to citizens, for example through credits in higher education after the Bologna reform (BMBF 2020c, p. 125). One feels compelled to add the deeply entrenched inurement to quantification from much earlier in life through the school grade. An anonymous expert is cited that ‘the willingness to delegate tasks and decisions to algorithms is already there and will grow further. Mankind is adapting’ (BMBF 2020c, p. 127). Another unnamed expert stresses that individuals happily give away their data out of sheer laziness and accept that their freedom and control are curbed in return

(BMBF 2020c, p. 125). The study also asserts that those partaking in the point system are prepared to sacrifice self-determination in return for safety (BMBF 2020c, p. 128). Two historical moments are named as particularly beneficial in fostering societal approval of the point system: climate change and COVID-19. It is argued that the climate crisis will lead citizens to applaud the system for it creates pressure to act and enforces the 'polluter pays principle' (BMBF 2020c, p. 124). Arguably the most alarming quote, which stands uncomplemented, is the following relating to the COVID-19 crisis:

Following a hypothesis by Ivan Krastev, the Covid-19 crisis could enhance the attractiveness of Big Data based authoritarianism of the kind which the Chinese government cultivates, for it is here that one could see the efficiency of response and the ability of the Chinese state to control the movements and conduct of its population (BMBF 2020c, p. 125).

If both COVID-19 and climate change are considered as decisive in achieving the population's acceptance of technologies which would otherwise likely be condemned, then the uncomfortable question arises whether it is in the interest of government(s) to both exacerbate and exploit a sense of crisis for this very purpose. With environmental issues so long neglected on the political agenda, an astonishing U-turn can now be witnessed, at least in many European countries. In political speeches, policy and the media, a feeling of panic is now emphasised with unprecedented force, and the same style of reporting dominated on COVID-19. What is apparent in both cases, moreover, is that governments, including the German one, are making a substantial effort to trace back both of these highly complex problematics to individual irresponsibility. The personal CO₂-footprint is coming to occupy a prominent role in governmental climate policy, for example in the UN's 'Act Now' campaign ([United Nations 2021a](#)), at the cost of serious systemic changes. Also with regards to COVID-19, one could observe an increasingly aggressive political and medial strategy to blame a wide range of ills – economic, social, and relating to the health system – entirely onto those who were hesitant, unable or unwilling to get vaccinated against the disease. Where such a trope of suspicion informs the public narrative, where the irresponsibility of the individual is continuously evoked and where large swathes of society are depicted as irrational, inconsiderate or misguided, calls for the state to 'intervene' can be expected to grow louder.

In times of crisis – whether felt or actual – social quantification may appear as an attractive solution. Its great disciplinary power satisfies a longing for order and safety, yet at the same time numbers appear like neutral entities, untainted by political motives. Calculated rewards and punishments of the sort involved in credit scoring seem more humane and fair than blunt force, even though they can achieve much the same result in terms of citizens' conformity. A quantificational regime is easiest to introduce in societies which

hold numbers in great esteem, and particularly if the two popular criteria of objectivity and transparency are met. An open communication of how scores or ratings are arrived at defuses much criticism and once more creates an impression of fairness. The fact that quantification allows for the comparison and ranking of individuals represents a further conducive factor for its approval, as this inherent logic of hierarchy aligns well with the widespread meritocratic ideal. Finally and crucially, most of us are used to being quantified since early childhood through grading. Having been judged with numbers during many formative years can significantly lower the threshold for accepting or even applauding further quantification.

But the case of grades also holds great power as a cautionary tale against the increasing datafication of human beings, not only in scenarios as all-encompassing and dystopian as social credit scoring, but also on a smaller scale in daily and working life. The example of grading exposes the harms that are routinely inflicted on the bearers of numbers – putting them into the spotlight, overriding their testimony, and causing the pain of judgement – to name but a few. Quantification is moreover easily abused for disciplinary purposes, as both teachers and students know, and a closer look at marking also brings moral tensions to the fore. When humans are rated and compared like products or universities, then this fundamentally threatens their status as unique and priceless incommensurables. Lastly, the global success story of grades makes it evident how much we get accustomed to an established metric and rely on it to structure society and to guide our evaluations – of others as well as ourselves. For many people a world without grades is hardly imaginable, and it takes much effort and courage to envisage alternatives.

Quantification is on the rise globally, which can serve as an invitation to cast a critical eye at how we use, produce, and carry numbers. A healthy degree of wariness is certainly well-advised in current times, for if the case of grades shows anything, it is that once a quantificational system is implemented it is there to stay.

Note

- ¹ One of the most prominent figures in this realm is Alfie Kohn (see for example 2013). A collection of thoughts on the matter was edited by [Bower and Thomas \(2013\)](#) and further discussion can, for example be found in [Stobart \(2008\)](#).

Appendices

Appendix A: Translations of student resolutions

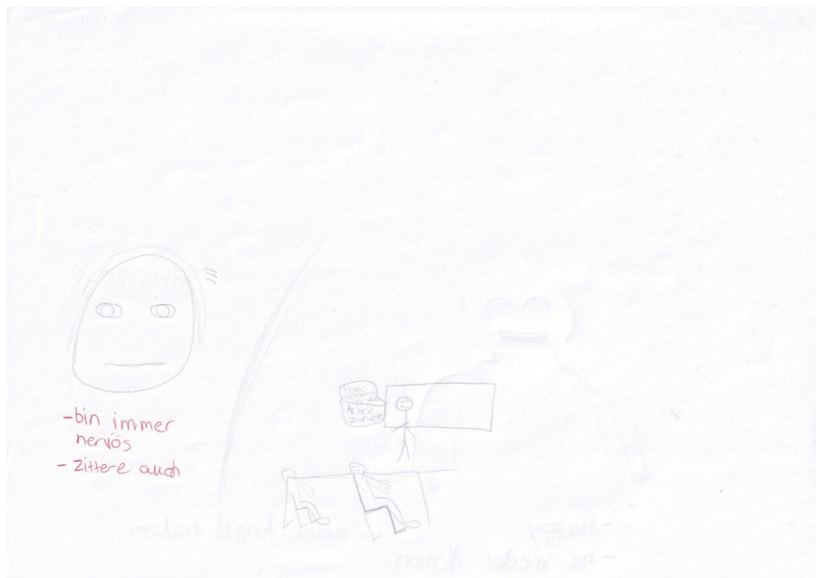
Figure A.1. Translation of student resolutions (depicted as [Figure 6.1](#))



Note: Photograph and editing by author.

Appendix B: Additional student drawings

Figure B.1. Lena's drawing



Notes: She has written 'Am always nervous' and 'shaking, too'. The teacher in the picture says 'Today you will get the exam back'.

Figure B.2. Dennis's drawing

Notes: He has written the word 'nervous' in the top left corner. Below the face on the left-hand side, he has written 'I'll 100% get a bad grade'. In the speech bubble it says 'I bet I'll get a 4 or so.' In the top drawing, Dennis has indicated the heart. On the back side of the paper, Dennis drew his reactions to a 1 and 6, respectively (shining through slightly).

References

- Achermann, Emil (1966) *Methodik des Volksschulunterrichtes [Methodology of Primary School Teaching]*, Hochdorf: Martinusverlag.
- Adams, Vincanne (2016) *Metrics: What Counts in Global Health*, Durham, NC: Duke University Press.
- AG Bildungsforschung und -planung Universität Essen (2000) *Entstehung, Struktur und Steuerung des deutschen Schulsystems [Emergence, Structure and Governance of the German School System]*. Accessed 27 June 2025. https://duepublico.uni-duisburg-essen.de/servlets/DerivateServlet/Derivate-1082/skript_15052000.pdf
- Álvarez-Bueno, Celia; Pesce, Caterina; Caverio-Redondo, Iván; Sánchez-López, Mairéna; Garrido-Miguel, Miriam and Martínez-Vizcaíno, Vicente (2017) 'Academic achievement and physical activity: a meta-analysis' *Pediatrics* vol. 140, no. 6, p. e20171498. <https://doi.org/10.1542/peds.2017-1498>
- Amrein, Audrey L and Berliner, David C (2002) 'High-stakes testing, uncertainty, and student learning' *Education Policy Analysis Archives* vol. 10, no. 18. <https://doi.org/10.14507/epaa.v10n18.2002>
- Amrhein, Valentin; Greenland, Sander and McShane, Blake (2019) 'Scientists rise up against statistical significance' *Nature*. vol. 567, pp. 305–07. <https://doi.org/10.1038/d41586-019-00857-9>
- Ancker, Jessica S; Witteman, Holly O; Hafeez, Baria; Provencher, Thierry; Van de Graaf, Mary and Wei, Esther (2015) '“You Get Reminded You’re a Sick Person”: Personal Data Tracking and Patients with Multiple Chronic Conditions' *Journal of Medical Internet Research* vol. 17, no. 8. <https://doi.org/10.2196/jmir.4209>
- Annas, Julia (2005) 'Virtue Ethics' in *Oxford Handbook of Ethical Theory*. Oxford: Oxford University Press, pp. 515–34. <https://doi.org/10.1093/0195147790.003.0019>
- Arendt, Hannah (1954) *The Crisis in Education*. Accessed 27 June 2025. https://thi.ucsc.edu/wp-content/uploads/2016/09/Arendt-Crisis_In_Education-1954.pdf
- Arnold, Karl-Heinz and Jürgens, Eiko (2001) *Schülerbeurteilung ohne Zensuren [Evaluating Students Without Grades]* in: Jürgens, E (ed) *Studentex*, Neuwied: Hermann Luchterhand Verlag GmbH.

- Aspara, Jaakko; Wittkowski, Kristina and Luo, Xueming (2018) 'Types of intelligence predict likelihood to get married and stay married: large-scale empirical evidence for evolutionary theory' *Personality and Individual Differences*, vol. 122, no. 1–6. <https://doi.org/10.1016/j.paid.2017.09.028>
- Athanassoulis, Nafsika (2013) *Virtue Ethics*. London: Bloomsbury.
- Balzer, Nicole (2020) 'Foucault Rezeption - Pädagogik [Foucault Reception - Pedagogy]' in: Kammiller, C, Parr, R and Schneider, U J (eds) *Foucault Handbuch. Leben - Werk - Wirkung*, Berlin: J.B. Metzler, pp. 463–74. https://doi.org/10.1007/978-3-476-05717-4_86
- Barksdale-Ladd, Mary Alice and Thomas, Karen F (2000) 'What's at stake in high-stakes testing: teachers and parents speak out' *Journal of Teacher Education*, vol. 51, no. 5. <https://doi.org/10.1177/0022487100051005006>
- Barrow, John D (1992) *Pi in the Sky: Counting, Thinking, and Being*. Oxford: Oxford University Press.
- Barton, Laura (2008) 'On the money' *The Guardian*, 31 October. Accessed 27 June 2025. www.theguardian.com/business/2008/oct/31/creditchungillian-tett-financial-times
- Baskin, Jonathan Salem (2014) 'According to U.S. big data, we won the Vietnam War' *Forbes Magazine*. Accessed 27 June 2025. www.forbes.com/sites/jonathansalembaskin/2014/07/25/according-to-big-data-we-won-the-vietnam-war/
- Beck, Michael; Jäpel, Franziska; and Becker, Rolf (2010) 'Determinanten des Bildungserfolgs von Migranten [Determinants of Migrants' Educational Success]' in: Hurrelmann, K and Quenzel, G (ed) *Bildungsverlierer. Neue Ungleichheiten*, Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 313–37. https://doi.org/10.1007/978-3-531-92576-9_15
- Becker, Anne Katrin (2003) '"Ruhrdeutsch". Die Sprache des Ruhrgebiets in einer Umfassenden Analyse ["Ruhr German". The Language of the Ruhr Area in a Comprehensive Analysis]' Albert-Ludwigs-Universität zu Freiburg. Accessed 27 June 2025. <https://api.deutsche-digitale-bibliothek.de/binary/72ec5629-61ab-4273-b37e-9cb6a6dfbe88.pdf>
- Becker, Howard S; Geer, Blanche; and Hughes, Everett Cherrington (1968) *Making the Grade: The Academic Side of College Life*. London: Routledge.
- Belcher, Oliver (2015) 'Data Anxieties: Objectivity and Difference in Early Vietnam Computing' in: Amooore, L and Piotukh, V (eds) *Algorithmic Life: Calculative Devices in the Age of Big Data*, New York: Routledge.

- Berliner, David (2011) 'Rational responses to high stakes testing: the case of curriculum narrowing and the harm that follows' *Cambridge Journal of Education*, vol. 41, no. 3. <https://doi.org/10.1080/0305764X.2011.607151>
- Berman, Elizabeth Popp and Hirschman, Daniel (2018) 'The sociology of quantification: where are we now?' *Contemporary Sociology: A Journal of Reviews*, vol. 47, no. 3, pp. 257–66. <https://doi.org/10.1177/0094306118767649>
- Bernhard, Hans-Wilhelm (2018) 'Wie Geht's weiter mit der Hauptschule? [What's Next for the Hauptschule?]' *Gewerkschaft Erziehung Und Wissenschaft Nordrhein-Westfalen*. Accessed 10 November 2020. www.gew-nrw.de/neuigkeiten/detail/wie-gehts-weiter-mit-der-hauptschule
- Bezirksregierung Detmold (2021) 'Schule: Bezirksregierung Detmold [School: District Government Detmold]'. Accessed 18 August 2021. www.bezreg-detmold.nrw.de/wir-ueber-uns/organisationsstruktur/abteilung-4
- Biesta, Gert (2009) 'Good education in an age of measurement: on the need to reconnect with the question of purpose in education' *Educational Assessment, Evaluation and Accountability*, vol. 21, no. 1, pp. 33–46. <https://doi.org/10.1007/s11092-008-9064-9>
- Bittencourt, Tiago (2021) 'Being more: stress and moral worthiness in an elite private school in ecuador' *Anthropology and Education Quarterly*, vol. 52, no. 4. <https://doi.org/10.1111/aeq.12373>
- Bläser, Kerstin (2017) *Ermessensraum: Zur Kalkulativen Hervorbringung von Investitionsobjekten im Immobiliengeschäft [Discretionary Scope: On the Calculative Production of Investment Objects in the Real Estate Business]*. Bielefeld: transcript Verlag. <https://doi.org/10.1515/9783839438596>
- BMBF (2019) 'Bundesministerin Karliczek: Deutsch-Französischer Besuch in China ist wichtiges Signal [Minister Karliczek: Franco-German visit to China is an important signal]' *Kooperation International*. Accessed 1 December 2021. www.kooperation-international.de/aktuelles/nachrichten/detail/info/bundesministerin-karliczek-deutsch-franzoesischer-besuch-in-china-ist-wichtiges-signal/
- BMBF (2020a) *Statistik-TELEGRAMM 2019/20*. Federal Ministry of Education and Research. Accessed 15 March 2021. www.schulministerium.nrw/system/files/media/document/file/stattelegamm2019.pdf
- BMBF (2020b) *Was sind Bedarfssätze und wie hoch sind sie? [What Are Needs Rates and How Much Are They?]*. Accessed 7 February 2022. Federal Ministry of Education and Research. www.bafög.de/de/welche-bedarfssaetze-sieht-das-bafoeg-vor--375.php

- BMBF (2020c) 'Zukunft von Wertvorstellungen der Menschen in unserem Land [The future of values held by people in our country]' *Foresight Study by the German Ministry of Education and Research*. Accessed 14 May 2023. www.bmbf.de/SharedDocs/Downloads/DE/v/zukunft-wertvorstellungen-lang.pdf?__blob=publicationFile&v=3
- Bobertag, O (1933) 'Leistungsschätzung und Leistungsmessung in der Volksschule [Performance assessment and measurement in elementary schools]' *Zeitschrift für pädagogische Psychologie*, vol. 34, pp. 377–93.
- Bonefeld, Meike and Dickhäuser, Oliver (2018) '(Biased) grading of students' performance: students' names, performance level, and implicit attitudes' *Frontiers in Psychology*, vol. 9. <https://doi.org/10.3389/fpsyg.2018.00481>
- Borchard, Michael; Henry-Huthmacher, Christine; Merkle, Tanja; Wippermann, Carsten; and Hoffmann, Elisabeth (2008) *Eltern Unter Druck. Selbstverständnisse, Befindlichkeiten und Bedürfnisse von Eltern in verschiedenen Lebenswelten. [Parents under Pressure. Self-Conceptions, Sensitivities and Needs of Parents in Different Lifeworlds]*. Konrad Adenauer Stiftung. <https://doi.org/10.1515/9783828260092-001>
- Boudon, Raymond (1974) *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society*. New York: Wiley.
- Bourdieu, Pierre and Passeron, Jean Claude (1990) *Reproduction in Education, Society and Culture*. London: Sage.
- Bower, Joe and Thomas, Paul L (2013) *De-Testing and De-Grading Schools. Authentic Alternatives to Accountability and Standardization*. Peter Lang Inc.
- Bratcher, Suzanne and Ryan, Linda (2004) *Evaluating Children's Writing: A Handbook of Grading Choices for Classroom Teachers*, 2nd edn, Mahwah, N.J.: L. Erlbaum Associates, Publishers.
- Bröckling, Ulrich (2007) *Das unternehmerische Selbst: Soziologie einer Subjektivierungsform [The Entrepreneurial Self. Fabricating a New Type of Subject]*. Berlin: Suhrkamp Verlag.
- Bröckling, Ulrich (2014) 'Wettkampf und Wettbewerb. Semantiken des Erfolgs zwischen Sport und Ökonomie [Competition. Semantics of success between sport and economy]' *Leviathan*, vol. 42, no. 29, pp. 71–81. https://doi.org/10.5771/9783845244853_92
- Bröckling, Ulrich and Peter, Tobias (2014) 'Mobilisieren und Optimieren: Exzellenz und Egalität als hegemoniale Diskurse im Erziehungssystem [Mobilizing and optimizing: excellence and egalitarianism as hegemonic discourses in the educational system]' *Zeitschrift Für Erziehungswissenschaft*. <https://doi.org/10.1007/s11618-014-0526-1>

- Brookhart, Susan M (2008) *How to Give Effective Feedback to Your Students*. Alexandria, Va.: Association for Supervision and Curriculum Development.
- Brugger, W and Schöndorf, H (2010) *Philosophisches Wörterbuch [Philosophical Dictionary]*. Freiburg im Breisgau: Verlag Karl Alber. <https://doi.org/10.24894/HWPh.3386>
- Bruno, Isabelle; Didier, Emmanuel; and Prévieux, Julien (2014) *Statactivisme. Comment Lutter Avec Des Nombres*, in: Bruno, I, Didier, E and J. Prévieux, J (eds) Paris: Zones, La Découverte.
- Bublitz, Hannelore (2020) 'Macht [Power]' in: edited by Kammler, C, Parr, R. and Schneider, U J (eds) *Foucault Handbuch. Leben - Werk - Wirkung*, Berlin: J.B. Metzler, pp. 316–19. https://doi.org/10.1007/978-3-476-05717-4_64
- Bull, R and Stevens, J (1979) 'The effects of attractiveness of writer and penmanship on essay grades' *Journal of Occupational Psychology*, vol. 52, no. 53–59. <https://doi.org/10.1111/j.2044-8325.1979.tb00440.x>
- Carel, Havi and Györfy, Gita (2014) 'The art of medicine: seen but not heard: children and epistemic injustice' *The Lancet*, vol. 384, no. 9950. [https://doi.org/10.1016/S0140-6736\(14\)61759-1](https://doi.org/10.1016/S0140-6736(14)61759-1)
- Carless, David and Lam, Ricky (2014) 'The examined life: perspectives of lower primary school students in Hong Kong' *Education 3-13*, vol. 42, no. 3, pp. 313–29. <https://doi.org/10.1080/03004279.2012.689988>
- Carmichael, Alexandra (2010) 'Why I stopped tracking' *Quantified Self Website*. Accessed 22 January 2019. <http://quantifiedself.com/2010/04/why-i-stopped-tracking/>
- Castillo, Juan Carlos; Maldonado, Luis; Meneses, Francisco; and Atria, Jorge (n.d.) 'Measuring perceptions and preferences for meritocracy' *Preprint*. Accessed 27 June 2025. www.researchgate.net/publication/357262684_Measuring_Perceptions_and_Preferences_for_Meritocracy
- Clark, D (2025) 'Average Annual Private School Day Fees in the United Kingdom from 2020 to 2024'. Accessed 27 June 2025. www.statista.com/statistics/1448034/uk-private-school-fees/
- Codina Mir, Gabriel (1968) *Aux Sources de La Pédagogie Des Jésuites. Le «Modus Parisiensis»*. Rome: Institutum Historicum Societatis Iesu. Accessed 27 June 2025. <https://archive.org/details/bhsi28/page/n5/mode/2up>
- Conard, Maureen A (2006) 'Aptitude is not enough: how personality and behavior predict academic performance' *Journal of Research in Personality*, vol. 40, no. 3, pp. 339–46. <https://doi.org/10.1016/j.jrp.2004.10.003>

- Cook, Jonathan (2019) 'The McNamara fallacy in your business' *LinkedIn Blog*. Accessed 23 August 2021. www.linkedin.com/pulse/mcnamara-fallacy-your-business-jonathan-cook
- Crawford, Kate; Lingel, Jessa; and Karppi, Tero (2015) 'Our metrics, ourselves: a hundred years of self-tracking from the weight scale to the wrist wearable device' *European Journal of Cultural Studies*, vol. 18, no. 4–5. <https://doi.org/10.1177/1367549415584857>
- Creemers, Rogier (2018) 'China's social credit system: an evolving practice of control' <https://doi.org/10.2139/ssrn.3175792>
- Cukier, Kenneth and Mayer-Schönberger, Viktor (2013) 'The dictatorship of data' *MIT Technology Review*. Accessed 27 June 2025. www.technologyreview.com/2013/05/31/178263/the-dictatorship-of-data/
- Darnon, Céline; Smeding, Annique; and Redersdorff, Sandrine (2018) 'Belief in school meritocracy as an ideological barrier to the promotion of equality' *European Journal of Social Psychology*, vol. 48, no. 4, pp. 523–34. <https://doi.org/10.1002/ejsp.2347>
- Daston, Lorraine and Galison, Peter (2007) *Objectivity*. New York: Zone Books.
- Demmer, Marianne (2008) 'LIFE-Studie bestätigt starke Abhängigkeit des Bildungserfolgs von sozialer Herkunft [LIFE study confirms strong dependence of educational success on social origin]' *Gewerkschaft Erziehung und Wissenschaft Nordrhein-Westfalen*. Accessed 17 November 2020. www.gew.de/aktuelles/detailseite/neuigkeiten/life-studie-bestaetigt-starke-abhaengigkeit-des-bildungserfolgs-von-sozialer-herkunft/
- Dench, Geoff (2006) *The Rise and Rise of Meritocracy*, in: Dench, G (ed) Oxford: Blackwell Publishing in association with The Political Quarterly.
- Denis, Jean-Louis; Langley, Ann; and Rouleau, Linda (2006) 'The power of numbers in strategizing' *Strategic Organization*, vol. 4, no. 4, pp. 349–77. <https://doi.org/10.1177/1476127006069427>
- Desrosières, Alain (2001) 'How real are statistics? Four possible attitudes' *Social Research*, vol. 68, no. 2, pp. 339–55. www.jstor.org/stable/40971461
- Deutscher Bundestag (2021) 'Antwort der Bundesregierung auf die kleine Anfrage der Abgeordneten Dr. Petra Sitte, Simone Barrientos, Dr. Birke Bull-Bischoff, weiterer Abgeordneter und der Fraktion DIE LINKE. [Reply of the Government to a Request for Information on the Bonus Point Sce]' *Drucksache 19/32218*. Accessed 27 June 2025. <https://dserv.bundestag.de/btd/19/322/1932218.pdf>
- Deutscher Bundestag (2006) 'Vor- und Nachteile der Gesamtschule bzw. des dreigliedrigen Schulsystems. [Advantages and Disadvantages of the

- Gesamtschule and the Tripartite School System]’ *Ausarbeitung WD 8 - 231/2006*. Accessed 27 June 2025. www.bundestag.de/resource/blob/415418/WD-8-231-06-pdf.pdf
- Didier, Emmanuel (2020) *America by the Numbers: Quantification, Democracy, and the Birth of National Statistics*. Cambridge, MA: MIT Press. <https://doi.org/10.7551/mitpress/12008.001.0001>
- Dobelli, Rolf (2019) *Die Kunst des Digitalen Lebens. Wie Sie auf News verzichten und die Informationsflut meistern. [The Art of Digital Living. How to Do Without News and Master the Information Overload.]*. München: Piper.
- Dohse, W (1967) *Das Schulzeugnis: Sein Wesen und seine Problematik [The School Report: Its Nature And Its Problems]*. Weinheim/Basel: Beltz Verlag.
- Edelstein, Benjamin (2013) ‘Das Bildungssystem in Deutschland. Bildungseinrichtungen, Übergänge und Abschlüsse [The education system in Germany. Educational institutions, transitions and qualifications]’ *Bundeszentrale für Politische Bildung*. Accessed 29 October 2018. www.bpb.de/gesellschaft/bildung/zukunft-bildung/163283/das-bildungssystem-in-deutschland
- Edelstein, Benjamin and Grellmann, Simone (2017) ‘Welche Sekundarschulen gibt es in Deutschland und welche Bildungsgänge werden dort unterrichtet? [Which secondary schools are there in germany and which courses of education are taught there?]’ *Bundeszentrale für Politische Bildung*. Accessed 2 January 2019. www.bpb.de/gesellschaft/bildung/zukunft-bildung/256373/welche-sekundarschulen-gibt-es-in-deutschland-und-welche-bildungsgaenge-werden-dort-unterrichtet
- Edelstein, Benjamin and Veith, Hermann (2017) ‘Schulgeschichte nach 1945: Von der Nachkriegszeit bis zur Gegenwart [School history after 1945: from the postwar period to the present day]’ *Bundeszentrale für Politische Bildung*. Retrieved 2 January 2019. www.bpb.de/gesellschaft/bildung/zukunft-bildung/229702/schulgeschichte-nach-1945
- Eells, W C (1930) ‘Reliability of repeated grading of essay type examinations’ *Journal of Educational Psychology*, vol. 21, no. 48. <https://doi.org/10.1037/h0071103>
- Elman, Benjamin A (2013) *Civil Examinations and Meritocracy in Late Imperial China*. Cambridge, MA: Harvard University Press. <https://doi.org/10.4159/harvard.9780674726048>
- Emerson, Robert M; Fretz, Rachel I; and Shaw, Linda L (2011) *Writing Ethnographic Fieldnotes*, 2nd edn, Chicago: University of Chicago Press. <https://doi.org/10.7208/chicago/9780226206868.001.0001>

- Engelke, Matthew (2017) *Think Like an Anthropologist*. London: Pelican.
<https://doi.org/10.23943/9781400889525>
- Espeland, Wendy Nelson and Sauder, Michael (2007) 'Rankings and reactivity: how public measures recreate social worlds' *American Journal of Sociology*, vol. 113(1). <https://doi.org/10.1086/517897>
- Espeland, Wendy Nelson and Sauder, Michael (2016) *Engines of Anxiety: Academic Rankings, Reputation, and Accountability*. New York: Russell Sage Foundation.
- Espeland, Wendy Nelson and Stevens, Mitchell L (1998) 'Commensuration as a social process' *Annual Review of Sociology*, vol. 24, pp. 313–43.
<https://doi.org/10.1146/annurev.soc.24.1.313>
- Espeland, Wendy Nelson and Stevens, Mitchell L (2008) 'A sociology of quantification' *Archives Européennes de Sociologie*, vol. 4, no. 3, pp. 401–36. <https://doi.org/10.1017/S0003975609000150>
- Espeland, Wendy and Yung, Vincent (2019) 'Ethical dimensions of quantification' *Social Science Information*, vol. 58, no. 2, pp. 238–60.
<https://doi.org/10.1177/0539018419851045>
- Everett, Caleb (2017) *Numbers and the Making of Us: Counting and the Course of Human Cultures*. Cambridge, MA: Harvard University Press.
<https://doi.org/10.4159/9780674979185>
- Everhart, Robert B (1983) *Reading, Writing, and Resistance: Adolescence and Labor in a Junior High School*. Boston: Routledge & Kegan Paul.
- Farrell, Allan P (1970) *The Jesuit Ratio Studiorum of 1599. Translated into English, with an Introduction and Explanatory Notes*. Washington: Conference of Major Superiors of Jesuits. Accessed 27 June 2025. www.educatamagis.org/wp-content/uploads/documents/2019/09/ratio-studiorum-1599.pdf
- Farrell, M J and Gilbert, N (1960) 'A type of bias in marking examination scripts' *British Journal of Educational Psychology*, vol. 30, pp. 47–52.
<https://doi.org/10.1111/j.2044-8279.1960.tb01520.x>
- Fess, Philipp (2022a) '“Fuel Pass“ in Griechenland Und Sri Lanka - Ein Großer Sprung in Richtung Sozialkreditsystem' *Cicero. Magazin Für Politische Kultur*. Accessed 27 June 2025. www.cicero.de/aussenpolitik/wirtschaftskrise-digitale-identitaet-zentralbankwaehrung-sri-lanka-griechenland-sozialkreditsystem
- Fess, Philipp (2022b) 'Bolognas Sozialkredit-System - Leben im Jahr 2030: Smart, nachhaltig – und totalüberwacht [Bologna's Social Credit System - Life in 2030: Smart, Sustainable - and under Total Surveillance]' *Cicero*.

- Magazin Für Politische Kultur*. Accessed 27 June 2025. www.cicero.de/kultur/bologna-sozialkredit-system-china-agenda-2030-smart-cities
- Flitner, Andreas (1970) 'Zensuren und Zeugnis [Grades and Report Cards]' in *Brennpunkte gegenwärtiger Pädagogik. Studien zur Schul- und Sozialerziehung [Focal Points of Contemporary Pedagogy. Studies in School and Social Education]*, in: Flitner, A (ed), München: Piper.
- Foucault, Michel (1990) *Discipline and Punish: The Birth of the Prison*. Harmondsworth: Penguin Books.
- Foucault, Michel (1991) *Discipline and Punish [Electronic Resource]: The Birth of the Prison*. London: Penguin Books.
- Fricker, Miranda (2007) *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198237907.001.0001>
- Friedman, Jane (2015) 'Why suspend judging?' *Noûs*, vol. 51, no. 2. <https://doi.org/10.1111/nous.12137>
- Frietsch, Martina and Aufmkolk, Tobias (2018) 'Schulgeschichte: Das Schulglossar [School history: the school glossary]' *Planet Wissen*. Accessed 2 January 2019. www.planet-wissen.de/gesellschaft/lernen/schulgeschichte/pwiedasschulglossar100.html#Laendersache
- Gardner, Howard (2006) *Multiple Intelligences: New Horizons*. New York: BasicBooks.
- Gehlke, Anna; Hachmeister, Cort-Denis; and Hüning, Lars (2019) *Der Numerus Clausus (NC) im Wintersemester 2019/20. Was man über den Numerus Clausus (NC) wissen muss und wo es die meisten frei zugänglichen Studiengänge gibt [What You Need to Know about the Numerus Clausus]*. Gütersloh: CHE - Centrum für Hochschulbildung. Accessed 15 March 2021. www.che.de/wp-content/uploads/upload/Im_Blickpunkt_Der_Numerus_Clausus_NC_2019_20.pdf
- Geis-Thöne, Wido (2019) *IW-Kurzbericht 18/2019. Immer mehr Einser-Abiturienten - und was ist mit den Besten? [IW Brief Report 18/2019. More and More A-Grade High School Graduates - And What About the Best?]*. Institute of the German Economy. Accessed 15 March 2021. www.iwkoeln.de/fileadmin/user_upload/Studien/Kurzberichte/PDF/2019/IW-Kurzbericht_2019_Einser-Abiturienten.pdf
- Gelman, A (2019) 'Retire statistical significance: the discussion' *Statistical Modelling, Causal Inference, and Social Science [Blog]*. Accessed 27 April 2021. <https://statmodeling.stat.columbia.edu/2019/03/20/retire-statistical-significance-the-discussion>

- Generett, Gretchen Givens and Olson, Amy M (2020) 'The stories we tell: how merit narratives undermine success for urban youth' *Urban Education*, vol. 55, no. 3, pp. 394–423. <https://doi.org/10.1177/0042085918817342>
- Gettier, E L (1963) 'Is justified true belief knowledge?' *Analysis (Oxford)*, vol. 23, no. 6, pp. 121–23. <https://doi.org/10.1093/analys/23.6.121>
- Grading systems by country (2021) 'Grading systems by country' *Wikipedia*. Accessed 27 June 2025. https://en.wikipedia.org/wiki/Grading_systems_by_country
- Grant, Barbara (1997) 'Disciplining students: the construction of student subjectivities' *British Journal of Sociology of Education*, vol. 18, no. 1, pp. 101–14. <https://doi.org/10.1080/0142569970180106>
- Grek, Sotiria (2009) 'Governing by numbers: the PISA 'effect' in Europe' *Journal of Education Policy*, vol. 24, no. 1. <https://doi.org/10.1080/02680930802412669>
- Grossarth-Maticek, Jan; Kann, Kathrin; and Koufen, Sebastian (2020) *Privatschulen in Deutschland - Fakten und Hintergründe [Private Schools in Germany - Facts and Background Information]*. Destatis K. Statistisches Bundesamt. Accessed 27 June 2025. www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Schulen/Publikationen/Downloads-Schulen/privatschulen-deutschland-dossier-2020.pdf?__blob=publicationFile
- Haecker, H (1971) 'Subjektive Faktoren im Leistungsurteil der Lehrer [Subjective factors in the teacher's performance judgment]' *Schule und Psychologie*, vol. 18, pp. 74–84.
- Hanewinkel, Reiner; Hansen, Julia; Neumann, Clemens; and Morgenstern, Matthis (2020) *Präventionsradar. Erhebung Schuljahr 19/20. Kinder- und Jugendgesundheit in Schulen [Prevention Radar. Survey School Year 19/20. Child and Adolescent Health in Schools]*. Institut für Therapie-und Gesundheitsforschung. Accessed 15 March 2025. www.praeventionsradar.de/downloads/Ergebnisbericht_SJ1920.pdf
- Hanson, F Allan (1994) *Testing Testing: Social Consequences of the Examined Life*. Berkeley: University of California Press. <https://doi.org/10.1525/9780520310964>
- Hardwig, J (1991) 'The role of trust in knowledge' *The Journal of Philosophy*, vol. 88, no. 12, pp. 693–708. <https://doi.org/10.2307/2027007>
- Haubursin, Christophe (2017) 'Automation is coming for truckers. but first, they're being watched' *Vox*. Accessed 27 June 2025. www.vox.com/vid-eos/2017/11/20/16670266/trucking-eld-surveillance

- Hauschild, Jana (2014) 'Sind Schulnoten noch zeitgemäß? [Are grades still up to date?]' *Spektrum.de*. Accessed 29 April 2021. www.spektrum.de/news/sind-schulnoten-noch-zeitgemaess/1312119
- Hedtke, Kathrin (2020) 'Lärm in Bildungseinrichtungen. Stressfaktor Lärm [Noise in educational institutions. Stress factor noise]' *Erziehung und Wissenschaft. Zeitschrift der Bildungsgewerkschaft GEW*, 6–9. Accessed 15 March 2021. www.gew.de/index.php?eID=dumpFile&t=f&f=96355&token=30df85ff78f58a3c86b177b51b2c223955efc5f2&sdownload=&n=EW-05-2020-web.pdf
- Heeren, Behrend (2019) 'Gesamtschule in NRW: Ein Erfolgsmodell?! [Comprehensive school in NRW: a success model?!]' *Gewerkschaft Erziehung und Wissenschaft Nordrhein-Westfalen*. Accessed 10 November 10, 2020. www.gew-nrw.de/neuigkeiten/detail/gesamtschule-in-nrw-ein-erfolgsmodell
- Heintz, Bettina (2007) 'Zahlen, Wissen, Objektivität: Wissenschaftssoziologische Perspektiven [Numbers, knowledge, objectivity. perspectives from the sociology of science]' in: Mennicken, A and Vollmer, H (eds) *Zahlenwerk*, Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 65–85. https://doi.org/10.1007/978-3-531-90449-8_4
- Heller, Kurt (1974) 'Zur Problematik Der Leistungsbeurteilung in Der Schule [The Problem of performance assessment in school]' *Zeitschrift Für Forschung Und Praxis*, vol. 21.
- Hemetsberger, Bernhard (2018) 'Kritik an Neuem Schulgesetz: 'Spätstarter kommen unter die Räder' [Criticism of new school law: 'late starters get left behind']' *Der Standard*. Accessed 15 March 2021. www.derstandard.at/story/2000089013193/kritik-an-neuem-schulgesetz-spaetstarter-kommen-unter-die-raeder
- Hendrick, Carl (2015) 'The McNamara fallacy and the problem with numbers in education' *Chronotope Blog*. Accessed 23 August 2021. <https://chronotopeblog.com/2015/04/04/the-mcnamara-fallacy-and-the-problem-with-numbers-in-education/>
- Herdegen, Peter (2008) *Schulische Prüfungen: Entstehung – Entwicklung – Funktion. Prüfungen am bayerischen Gymnasium vom 18. bis zum 20. Jahrhundert [School Examinations: Origins – Development – Function. Examinations at the Bavarian Gymnasium From the 18th to the 20th Century]*. Bad Heilbrunn: Verlag Julius Klinkhardt.
- Hesse, Hermann (1906) *Unterm Rad*. Berlin: S. Fischer.
- Hessinger, Rodney (1999) "The most powerful instrument of college discipline": student disorder and the growth of meritocracy in the

- colleges of the early republic' *Higher Education Quarterly*, vol. 39, no. 3, pp. 237–62. <https://doi.org/10.2307/370008>
- Hirschfeld, Lawrence A (2002) 'Why don't anthropologists like children?' *American Anthropologist*, vol. 104, no. 2. <https://doi.org/10.1525/aa.2002.104.2.611>
- Högberg, Björn; Lindgren, Joakim; Johansson, Klara; Strandh, Mattias; and Petersen, Solveig (2021) 'Consequences of school grading systems on adolescent health: evidence from a swedish school reform' *Journal of Education Policy*, vol. 36, no. 1, pp. 84–106. <https://doi.org/10.1080/02680939.2019.1686540>
- Hoskin, K and Macve, R (1994) 'Writing, Examining, Disciplining: The Genesis of Accounting's Modern Power' in: Hopwood, A G and Miller, P (ed) *Accounting as Social and Institutional Practice*, Cambridge: Cambridge University Press, pp. 67–97.
- Hoskin, Keith (1990) 'Foucault Under Examination: The Crypto-Educationalist Unmasked' in: Ball, S J (ed) *Foucault and Education: Disciplines and Knowledge*, London: Routledge, pp. 29–53.
- Houston, Brant (2019) 'Data Journalism' in *The International Encyclopedia of Journalism Studies*. John Wiley & Sons. <https://doi.org/10.1002/9781118841570.iejs0119>
- van Houtte, Mieke; Demanet, Jannick; and Stevens, Peter A J (2012) 'Self-esteem of academic and vocational students: does within-school tracking sharpen the difference?' *Acta Sociologica*, vol. 55, no. 1. <https://doi.org/10.1177/0001699311431595>
- Hursthouse, Rosalind (1991) 'Virtue theory and abortion' *Philosophy & Public Affairs*, vol. 20, no. 3, pp. 223–46. www.jstor.org/stable/2265432
- Hußmann, Anke; Wendt, Heike; Bos, Wilfried; Bremerich-Vos, Alfred; Kasper, Daniel; Lankes, Eva-Maria; McElvany, Nele; Stubbe, Tobias C; and Valtin, Renate (2017) *IGLU 2016. Lesekompetenzen von Grundschulkindern in Deutschland im Internationalen Vergleich [IGLU 2016. Reading Competencies of Primary School Children in Germany in International Comparison]*. Standing Conference of the Ministers of Education and Cultural Affairs. <https://doi.org/10.25656/01:15476>
- Ianiro-Dahm, Patrizia and Chwallek, Katharina (2016) 'Bericht zur zweiten Sozialerhebung der Studienstiftung des Deutschen Volkes. Onlinebefragung der Stipendiatinnen und Stipendiaten durchgeführt im April 2014 [Report on the Second Social Survey of the German National Academic Foundation]' Accessed 29 April 2021. www.studienstiftung.de/pool/sdv/public/documents/SERVICE/Publikationen/Zweite_Soziale_rhebung_Studienstiftung.pdf

- Igo, Sarah Elizabeth (2007) *The Averaged American: Surveys, Citizens, and the Making of a Mass Public*. Cambridge, MA: Harvard University Press. <https://doi.org/10.4159/9780674038943>
- Illich, Ivan (1973) *Deschooling Society*. Harmondsworth (Harmondsworth, Middx): Penguin Education.
- IM NRW (2018) *Verordnung über den Bildungsgang in der Grundschule (Ausbildungsordnung Grundschule – AO-GS) Vom 23.03.2005. [Ordinance on the Course of Education in the Elementary School (Educational Regulation Primary School)]*. Germany: Ministry of the Interior of the State of North Rhine-Westphalia. Accessed 15 March 2021. https://recht.nrw.de/lmi/owa/br_bes_detail?sg=0&menu=1&bes_id=7748&anw_nr=2&aufgehoben=N&det_id=303287
- Ingenkamp, Karlheinz (1976) *Die Fragwürdigkeit Der Zensurenggebung. Texte Und Untersuchungsberichte [The Questionability of Grading. Texts and Investigation Reports]*. Weinheim/Basel.
- Ingenkamp, Karlheinz (1990) 'Pädagogische Diagnostik in Deutschland 1885–1932 [Educational Diagnostics in Germany 1885–1932]' in *Geschichte der pädagogischen Diagnostik, Bd. I*.
- Islam, Gazi (2021) 'Business ethics and quantification: towards an ethics of numbers' *Journal of Business Ethics*, vol. 176, no. 2, pp. 1–17. <https://doi.org/10.1007/s10551-020-04694-z>
- Jackson, Michelle; Erikson, Robert; Goldthorpe, John H; and Yaish, Meir (2007) 'Primary and secondary effects in class differentials in educational attainment: the transition to A-Level courses in England and Wales' *Acta Sociologica*, vol. 50, no. 3. <https://doi.org/10.1177/0001699307080926>
- Jacob, Brian A and Levitt, Steven D (2003) 'Rotten apples: an investigation of the prevalence and predictors of teacher cheating' *Quarterly Journal of Economics*, vol. 118, no. 3. <https://doi.org/10.1162/00335530360698441>
- Jiménez, Raimundo and Vera, Jesús (2018) 'Effect of examination stress on intraocular pressure in university students' *Applied Ergonomics*, vol. 67, pp. 252–58. <https://doi.org/10.1016/j.apergo.2017.10.010>
- Jones, M Gail and Ennes, Megan (2018) 'High-Stakes Testing' in: *Oxford Bibliographies*. <https://doi.org/10.1093/obo/9780199756810-0200>
- Jost, John T; Banaji, Mahzarin R; and Nosek, Brian A (2004) 'A decade of system justification theory: accumulated evidence of conscious and unconscious bolstering of the status quo' *Political Psychology*, vol. 25, no. 6, pp. 881–919. <https://doi.org/10.1111/j.1467-9221.2004.00402.x>

- Jost, John T and Hunyady, Orsolya (2005) 'Antecedents and consequences of system-justifying ideologies' *Current Directions in Psychological Science*, vol. 14, no. 5, pp. 260–65. <https://doi.org/10.1111/j.0963-7214.2005.00377.x>
- Kahneman, Daniel (2011) *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.
- Kalthoff, Herbert (2013) 'Practices of grading: an ethnographic study of educational assessment' *Ethnography and Education*, vol. 8, no. 1, pp. 89–104. <https://doi.org/10.1080/17457823.2013.766436>
- Kalthoff, Herbert and Dittrich, Tristan (2016) 'Unterscheidung und Härtung. Bewertungs- und Notenkommunikation in Lehrerzimmer und Zeugniskonferenz [Differentiation and hardening. assessment and grade communication in the teachers' room and report card conference]' *Berliner Journal für Soziologie*, vol. 26, no. 3–4, pp. 459–83. <https://doi.org/10.1007/s11609-017-0324-8>
- Kamezaki, Yoshiko; Katsuura, Sakurako; Kuwano, Yuki; Tanahashi, Toshihito; and Rokutan, Kazuhito (2012) 'Circulating cytokine signatures in healthy medical students exposed to academic examination stress' *Psychophysiology*, vol. 49, no. 7, pp. 991–97. <https://doi.org/10.1111/j.1469-8986.2012.01371.x>
- Karabel, Jerome (2005) *The Chosen: The Hidden History of Admission and Exclusion at Harvard, Yale, and Princeton*. Boston: Houghton Mifflin.
- Kariya, Takehiko and Dore, Ronald (2006) 'Japan at the Meritocracy Frontier: From Here, Where?' in: Dench, G (ed) *The Rise and Rise of Meritocracy*, Oxford, UK and Malden, USA: Blackwell Publishing in association with The Political Quarterly, pp. 134–56. <https://doi.org/10.1111/j.1467-923X.2006.00790.x>
- Kawanishi, Yuko (2009) *Mental Health Challenges Facing Contemporary Japanese Society. The "Lonely People."* Kent, UK: Global Oriental. <https://doi.org/10.1163/ej.9781906876005.i-176>
- Kellaghan, Thomas and Greany, Vincent (2019) *Public Examinations Examined*. Washington: The World Bank. <https://doi.org/10.1596/978-1-4648-1418-1>
- Kerckhoff, Alan C (1986) 'Effects of ability grouping in British secondary schools' *American Sociological Review*, vol. 51, no. 6. <https://doi.org/10.2307/2095371>
- Kipnis, Andrew B (2012) 'Private lessons and national formations: national hierarchy and the individual psyche in the marketing of Chinese educational programs' Pp. 187–202 in: Kipnis, A B (ed) *Chinese*

- Modernity and the Individual Psyche*, New York: Palgrave Macmillan.
https://doi.org/10.1057/9781137268969_9
- Klapp, Alli (2015) 'Does grading affect educational attainment? A longitudinal study' *Assessment in Education: Principles, Policy and Practice*, vol. 22, no. 3, pp. 302–23. <https://doi.org/10.1080/0969594X.2014.988121>
- Klausner, Martina (2018) 'Calculating therapeutic compliance: an ethnographic account of numerical inference and interference in mobile health care' *Science and Technology Studies*, vol. 31, no. 4, pp. 30–51.
<https://doi.org/10.23987/sts.66375>
- KMK (2015) *Übergang von der Grundschule in Schulen des Sekundarbereichs I und Förderung, Beobachtung und Orientierung in den Jahrgangsstufen 5 und 6 (sog. Orientierungsstufe) [Transition from Elementary School to Lower Secondary Schools]*. Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany. Accessed 15 March 2021. www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2015/2015_02_19-Uebergang-Grundschule-SI-Orientierungsstufe.pdf
- KMK (2020) *Hochschulzugang und Hochschulzulassung, Kapazitäten, Flüchtlinge [University Access and Admission, Capacities, Refugees]*. Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany. Accessed 27 June 2025. www.kmk.org/themen/hochschulen/hochschulzugang-und-hochschulzulassung.html
- Kohn, Alfie (2013) 'The case against grades' *Counterpoints*, vol. 451, no. 1, pp. 143–53. www.jstor.org/stable/42982088
- Kollmayer, Marlene; Schober, Barbara; and Spiel, Christiane (2018) 'Gender stereotypes in education: development, consequences, and interventions' *European Journal of Developmental Psychology*, vol. 15, no. 4, pp. 361–77.
<https://doi.org/10.1080/17405629.2016.1193483>
- Koretz, D (2017) *The Testing Charade: Pretending to Make Schools Better*. Chicago: University of Chicago Press. <https://doi.org/10.7208/chicago/9780226408859.001.0001>
- Kosmahl, Stephan (2018) 'Wie geht's, Sekundarschule? [How's it going, Sekundarschule?]' *Nds. Die Zeitschrift der Bildungsgewerkschaft*. Accessed 15 March 2021. www.nds-zeitschrift.de/nds-8-2018/wie-gehts-sekundarschule
- Kostka, Genia (2019) 'China's social credit systems and public opinion: explaining high levels of approval' *New Media and Society*, vol. 21, no. 7.
<https://doi.org/10.1177/1461444819826402>

- Kraul, Margret (2014) 'Privatschulen in Deutschland [Private Schools in Germany]' *Bundeszentrale für Politische Bildung*. Accessed 2 January 2019. www.bpb.de/themen/bildung/dossier-bildung/191321/privatschulen-in-deutschland/
- Kultusministerkonferenz (2021) 'Abiturnoten 2020 an Gymnasien, integrierten Gesamtschulen, Fachgymnasien, Fachoberschulen und Berufsoberschulen [Abitur Grades 2020 at Gymnasia, integrated comprehensive schools, specialized grammar schools, specialized upper secondary schools and vocational schools]'. Accessed 27 June 2025. www.kmk.org/fileadmin/Dateien/pdf/Statistik/Dokumentationen/Aus_Abiturnoten_2020_Werte.pdf
- Lahroodi, Reza (2007) 'Collective epistemic virtues' *Social Epistemology*, vol. 21, no. 3, pp. 281–97. <https://doi.org/10.1080/02691720701674122>
- Lampert, Thomas and Ziese, Thomas (2005) *Armut, soziale Ungleichheit und Gesundheit. Eine Expertise des Robert Koch Instituts zum zweiten Armuts- und Reichtumsberichts der Bundesregierung [Poverty, Social Inequality and Health. An Expertise of the Robert Koch Institute]*. Federal Ministry of Labor and Social Affairs. Accessed 27 June 2025. https://edoc.rki.de/bitstream/handle/176904/3209/24aj8tYVir1Lo_14.pdf?sequence=1&isAllowed=y
- Lecher, Colin (2019) 'How Amazon automatically tracks and fires warehouse workers for "productivity"' *The Verge*. Accessed 27 June 2025. www.theverge.com/2019/4/25/18516004/amazon-warehouse-fulfillment-centers-productivity-firing-terminations
- Lemann, Nicholas (1999) *The Big Test. The Secret History of The American Meritocracy*. New York: Farrar, Straus and Giroux.
- Lepp, Andrew; Barkley, Jacob E; and Karpinski; Aryn C (2014) 'The relationship between cell phone use, academic performance, anxiety, and satisfaction with life in college students' *Computers in Human Behavior*, vol. 31. <https://doi.org/10.1016/j.chb.2013.10.049>
- Lepper, Mark R; Henderlong Corpus, Jennifer; and Iyengar, Sheena S (2005) 'Intrinsic and extrinsic motivational orientations in the classroom: age differences and academic correlates' *Journal of Educational Psychology*, vol. 97, no. 2, pp. 184–96. <https://doi.org/10.1037/0022-0663.97.2.184>
- Letendre, Gerald K; Hofer, Barbara K; and Shimizu, Hidetada (2003) 'What is tracking? cultural expectations in the United States, Germany, and Japan' *American Educational Research Journal*, vol. 40, no. 1, pp. 43–89. <https://doi.org/10.3102/00028312040001043>
- Lewis, C T and Short, C (1879a) 'Facere, V'. *A Latin Dictionary*. Accessed 27 June 2025. www.perseus.tufts.edu/hopper/morph?l=facere&la=la#lexicon

- Lewis, C T and Short, C (1879b) 'Quantitas, N.' *A Latin Dictionary*. Accessed 27 June 2025. www.perseus.tufts.edu/hopper/morph?l=quantitas&la=la#lexicon
- Liang, Fan and Chen, Yuchen (2022) 'The making of 'good' citizens: china's social credit systems and infrastructures of social quantification' *Policy and Internet*, vol. 14, no. 1, pp. 114–35. <https://doi.org/10.1002/poi3.291>
- Littler, Jo (2018) *Against Meritocracy: Culture, Power and Myths of Mobility*. London: Routledge. <https://doi.org/10.4324/9781315712802>
- Löbl, Diana and Onneken, Peter (2020) *Die Story im Ersten: Mütter, Väter, Kinder im Stress [The Story: Mothers, Fathers, Children under Stress]*. Tagesschau 24. Accessed 27 June 2025. www.ardmediathek.de/video/dokumentation-und-reportage/muetter-vaeter-kinder-im-stress/das-erste/Y3JpZDovL2Rhcy3RlLmRlL3JlcG9ydGFnZSBfIGRva3VtZW50YXRpb24gaW0gZXJzdGVuLzI0NDNmMDIILWY4YzAtNGE5MS04ZTU3LTliZWZWM2ODZlMmI1Yw
- Lupton, Deborah (2013) 'Quantifying the body: monitoring and measuring health in the age of MHealth technologies' *Critical Public Health*, vol. 23, no. 4, pp. 393–403. <https://doi.org/10.1080/09581596.2013.794931>
- Lupton, Deborah (2016) *The Quantified Self: A Sociology of Self-Tracking*. Malden, MA: Polity Press.
- Lupton, Deborah (2017) 'How does health feel? towards research on the affective atmospheres of digital health' *Digital Health*, vol. 3. <https://doi.org/10.1177/2055207617701276>
- Lupton, Deborah and Williamson, Ben (2017) 'The datafied child: the dataveillance of children and implications for their rights' *New Media and Society*, vol. 19, no. 5. <https://doi.org/10.1177/1461444816686328>
- Luvaas, Brent Adam (2016) *Street Style: An Ethnography of Fashion Blogging*. London: Bloomsbury. <https://doi.org/10.5040/9781350934429-FPA006>
- Luzzi, Federico (2016) 'Testimonial injustice without credibility deficit (or excess)' *Thought: A Journal of Philosophy*, vol. 5, no. 3, pp. 203–11. <https://doi.org/10.1002/tht3.212>
- Maaz, K and Nagy, G (2009) 'Der Übergang von der Grundschule in die weiterführenden Schulen des Sekundarschulsystems: Definition, Spezifikation und Quantifizierung primärer und sekundärer Herkunftseffekte [The transition from primary to secondary schools]' *Zeitschrift für Erziehungswissenschaft (Bildungsentscheidungen, Sonderheft 12)*: pp. 153–82. https://doi.org/10.1007/978-3-531-92216-4_7
- Maaz, Kai; Baeriswyl, Franz; and Trautwein, Ulrich (2011) *Herkunft Zensiert? Leistungsdiagnostik Und Soziale Ungleichheiten in Der Schule*.

- [*Marked Background? Performance Diagnostics and Social Inequalities in School*]. Vodafone Stiftung Deutschland. https://doi.org/10.1007/978-3-531-19393-9_13
- Mahdawi, Arwa (2021) 'This AI-powered app will tell you if you're beautiful - and reinforce biases, too' *The Guardian*. Accessed 27 June 2025. www.theguardian.com/commentisfree/2021/mar/06/ai-powered-app-tell-you-beautiful-reinforce-biases
- Mai, Jochen (2020) 'Hauptschulabschluss: Was kann man damit tun? [Hauptschulabschluss: what can you do with it?]' *Karrierebibel*. Accessed 16 March 2021. <https://karrierebibel.de/hauptschulabschluss/>
- Mannion, James (2017) 'Is everyone ok with fact that our school system forces 30% of children to fail their GCSEs?' *Re Thinking Education*. Accessed 21 May 2017. <https://rethinking-ed.org/2017/03/29/is-everyone-ok/>
- Marble, William O; Winne, Philip H; and Martin, Jack F (1978) 'Science achievement as a function of method and schedule of grading' *Journal of Research in Science Teaching*, vol. 15, no. 6, pp. 433–40. <https://doi.org/10.1002/tea.3660150602>
- Mari, Luca (2003) 'Epistemology of measurement' *Measurement*, vol. 34, no. 1, pp.17–30. [https://doi.org/10.1016/S0263-2241\(03\)00016-2](https://doi.org/10.1016/S0263-2241(03)00016-2)
- Markovits, Daniel (2019) *The Meritocracy Trap. How America's Foundational Myth Feeds Inequality, Dismantles the Middle Class, and Devours the Elite*. New York: Penguin Books.
- Mau, Steffen (2019) *The Metric Society: On the Quantification of the Social*. Cambridge, UK: Polity.
- Mau, Steffen and Vormbusch, Uwe (2018) 'Likes Statt Leistung. Ein Gespräch zwischen Uwe Vormbusch und Steffen Mau über die fortschreitende Quantifizierung des Sozialen [Likes instead of performance. uwe vormbusch and Steffen Mau on the increasing quantification of the social]' *Texte Zur Kunst*, 55–75. Accessed 27 June 2025. www.textezurkunst.de/de/110/likes-and-performance/
- Mayer, John D; Salovey, Peter; and Caruso, David R (2008) 'Emotional intelligence: new ability or eclectic traits?' *American Journal of Psychology*, vol. 63, no. 6, pp. 503–17. <https://doi.org/10.1037/0003-066X.63.6.503>
- McInerny, Ralph (2008) 'Some reflections on Aristotle and elitism' *The Review of Metaphysics*, vol. 61, no. 3, pp. 489–502. www.jstor.org/stable/20130974
- McKenzie, Jon (2001) *Perform or Else: From Discipline to Performance*. London: Routledge. <https://doi.org/10.4324/9780203420058>

- McKenzie, Lara (2021) 'Unequal expressions: emotions and narratives of leaving and remaining in precarious academia' *Social Anthropology*, vol. 29, no. 2, pp. 527–42. <https://doi.org/10.1111/1469-8676.13011>
- McLoughlin, C (2010) 'Playing with numbers,' *Anthropological Theory*, vol. 10, no. 1–2, pp. 75–80. <https://doi.org/10.1177/1463499610365372>
- Meidinger, Heinz-Peter (2018) *Warum gibt es in Deutschland keine Bildungsgerechtigkeit? Gespräch mit Heinz-Peter Meidinger [Why Is There No Educational Justice in Germany? Interview with Heinz-Peter Meidinger]*. Germany: SWR 2.
- Meister, Gabriele; Litschel, Laura-Solmaz; and Kirsten, Nadja (2018) 'NC - Das musst du wissen [NC - what you need to know]' *Zeit Campus*. Accessed 7 January 2019. www.zeit.de/campus/studienfuehrer-2017/numerus-clausus-studium-studienplatz
- Mennicken, Andrea and Espeland, Wendy Nelson (2019) 'What's new with numbers? sociological approaches to the study of quantification' *Annual Review of Sociology*, vol. 45, no. 1, pp. 223–45. <https://doi.org/10.1146/annurev-soc-073117-041343>
- Mennicken, Andrea and Vollmer, Hendrik (2007) *Zahlenwerk. Kalkulation, Organisation Und Gesellschaft*. Wiesbaden: VS Verlag für Sozialwissenschaften. <https://doi.org/10.1007/978-3-531-90449-8>
- Merry, Sally Engle (2016) *The Seductions of Quantification: Measuring Human Rights, Gender Violence, and Sex Trafficking*. Chicago: The University of Chicago Press. <https://doi.org/10.7208/chicago/9780226261317.001.0001>
- Mijs, Jonathan J B (2016) 'The unfulfillable promise of meritocracy: three lessons and their implications for justice in education' *Social Justice Research*, vol. 29, no. 1, pp. 14–34. <https://doi.org/10.1007/s11211-014-0228-0>
- Miller, Peter (2001) 'Governing by numbers: why calculative practices matter' *Social Research*, vol. 68, no. 2, pp. 379–96. www.jstor.org/stable/40971463
- Mills, David; Kingori, Patricia; Branford, Abigail; Chatio, Samuel T; Robinson, Natasha; and Tindana, Paulina (2023) *Who Counts?: Ghanaian Academic Publishing and Global Science*. Cape Town: African Minds. <https://doi.org/10.47622/9781928502647>
- Mills, David and Morton, Missy (2013) *Ethnography in Education*. Los Angeles: SAGE. <https://doi.org/10.4135/9781446251201>
- Möller, Gerd (2020) 'Benachteiligung beim Übergang in die Sekundarstufe I. Primäre und sekundäre Herkunftseffekte [Disadvantage in the transition to lower secondary education. primary and secondary effects of origin]'

Gewerkschaft Erziehung und Wissenschaft Nordrhein-Westfalen. Accessed 16 November 2020. www.gew-nrw.de/fileadmin/user_upload/Themen_Wissen_PDFs/Bildung_Soziales_PDFs/Bildungsgerechtigkeit_PDFs/Moeller_Primaere_und_sekundaere_Herkunftseffekte.pdf

Monbiot, George (2022) 'England's punitive exam system is only good at one thing: preserving privilege' *The Guardian*. Accessed 27 June 2025. www.theguardian.com/commentisfree/2022/apr/27/england-exam-system-children-mental-health

MSB NRW (2018a) *Merkblatt zur Berechnung der Gesamtqualifikation für Schülerinnen und Schüler der gymnasialen Oberstufe an Gymnasien und Gesamtschulen* [Information Sheet on the Calculation of the Overall Qualification for Students of the Upper Secondary School]. Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 27 June 2025. www.schulministerium.nrw/system/files/media/document/file/merkblatt-zur-berechnung-der-gesamtqualifikation.pdf

MSB NRW (2018b) *Verordnung über den Erwerb von Abschlüssen der Sekundarstufe I an Waldorfschulen (PO-Waldorf-S I)* [Ordinance on the Acquisition of Secondary Level I Qualifications at Waldorf Schools (PO-Waldorf-S I)]. Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 15 March 2021. https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=1000000000000000753#NORM

MSB NRW (2019a) *50 Jahre Gesamtschule: Vom Schulversuch zur nachgefragten Schulform* [50 Years of Comprehensive School: From a School Trial to a Popular School Form]. Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 27 June 2025. www.land.nrw/de/pressemitteilung/50-jahre-gesamtschule-vom-schulversuch-zur-nachgefragten-schulform

MSB NRW (2019b) *Statistik-Telegramm 2019/20*. Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 15 March 2021. www.schulministerium.nrw/system/files/media/document/file/stattelegamm2019.pdf

MSB NRW (2020a) *Schulgesetz für das Land Nordrhein-Westfalen (Schulgesetz NRW - SchulG)* [School Act for the State of North Rhine-Westphalia]. Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 27 June 2025. <https://bass.schul-welt.de/6043.htm#1-1p48>

MSB NRW (2020b) *Verordnung über den Bildungsgang und die Abiturprüfung in der Gymnasialen Oberstufe (APO-GOST)* [Regulation on the Course of Education and the Abitur Examination in the Upper Secondary School]. Germany: Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 15 March 2021. <https://bass.schul-welt.de/Stichwort/9607.htm#13-32nr3.1p12>

- MSB NRW (2020c) *Verordnung über die Ausbildung und die Abschlussprüfungen in der Sekundarstufe I (Ausbildungs- Und Prüfungsordnung Sekundarstufe I - APO-S I)* [Regulation on Education and Final Examinations in Secondary Level I]. Germany: Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 15 March 2021. <https://bass.schul-welt.de/12691.htm#13-21nr1.1p6>
- MSB NRW (2020d) *Verwaltungsvorschriften zur Verordnung über den Bildungsgang und die Abiturprüfung in der gymnasialen Oberstufe* [Administrative Regulations for the Ordinance on the Course of Education and the Abitur Examination in the Upper Secondary School]. Germany: Ministry for School and Education of the State of North Rhine-Westphalia. Accessed 15 March 2021. <https://bass.schul-welt.de/9609.htm#13-32nr3.1p14>
- Murris, Karin (2013) 'The epistemic challenge of hearing child's voice' *Studies in Philosophy and Education*, vol. 32, no. 3, pp. 245–59. <https://doi.org/10.1007/s11217-012-9349-9>
- Necek, Barbara (2018) *Südkorea – Erfolg Um Jeden Preis* [South Korea - Success At Any Price]. ZDF. Accessed 27 June 2025. www.fernsehserien.de/filme/suedkorea-erfolg-um-jeden-preis
- Neuhaus, Till and Jacobsen, Marc (2022) 'The troubled history of grades and grading: a historical comparison of Germany and the United States' *Formazione & Insegnamento*, vol. 20, no. 3. https://doi.org/10.7346/-fe-XX-03-22_40
- Newfield, Christopher; Alexandrova, Anna; and John, Stephen (eds) (2022) *Limits of the Numerical. The Abuses and Uses of Quantification*. Chicago: Chicago University Press. <https://doi.org/10.7208/chicago/9780226817163.001.0001>
- Nickel, H and Wiczerkowski, W (1974) 'Einflüsse auf die Beurteilung von Schüleraufsätzen - Ergebnisse einer quasi-experimentellen Versuchsreihe [Influences On The Assessment Of Student Essays - Results Of A Quasi-Experimental Series Of Trials]' in: Heller, K (ed) *Leistungsbeurteilung in der Schule*, Heidelberg. Accessed 27 June 2025. <https://core.ac.uk/download/pdf/12163168.pdf>
- Nihlén Fahlquist, Jessica (2019) 'Public health and the virtues of responsibility, compassion and humility' *Public Health Ethics*, vol. 12, no. 3, pp. 213–24. <https://doi.org/10.1093/phe/phz007>
- O'Mahony, S (2017) 'Medicine and the McNamara fallacy' *Journal of the Royal College of Physicians of Edinburgh*, vol. 47, no. 3, pp. 281–87. <https://doi.org/10.4997/jrcpe.2017.315>

- Oakes, Jeannie (1985) *Keeping Track: How Schools Structure Inequality*. New Haven, Conn.: Yale University Press.
- OECD (2008) *Growing Unequal? Income Distribution and Poverty in OECD Countries. Country Note Germany*. Accessed 27 June 2025. <https://web-archive.oecd.org/2014-07-28/123739-41525386.pdf>
- Oelkers, Jürgen (2002) 'Leistungen und Noten: Probleme der Schülerbeurteilung [Performance and grades: problems of student assessment]' in: *Fortbildungstagung des Gymnasiums Hofwil im coop-Zentrum MuttENZ*. Accessed 27 June 2025. <https://edudoc.ch/record/29498>
- Oltermann, Philip (2021) 'Olaf Scholz: "Merit in society must not be limited to top-earners"' *The Guardian*. Accessed 27 June 2025. www.theguardian.com/world/2021/sep/08/olaf-scholz-merit-society-not-be-limited-top-earners-germany-election
- Oni-Orisan, A (2016) 'The obligation to count: the politics of monitoring maternal mortality in Nigeria' in: Adams, V (ed) *Metrics. What Counts in Global Health*, Durham, NC: Duke University Press, pp. 82–105. <https://doi.org/10.2307/j.ctv1168c3w.6>
- Opitz, Senta and Ruhe, Hans Georg (2016) *75 Bildkarten Biografiearbeit [75 Pictures Biography Work]*. Weinheim: Beltz Verlag.
- Origi, Gloria (2012) 'Epistemic injustice and epistemic trust' *Social Epistemology*, vol. 26, no. 2, pp. 221–35. <https://doi.org/10.1080/02691728.2011.652213>
- Owens, Timothy J (1994) 'Two dimensions of self-esteem: reciprocal effects of positive self-worth and self-deprecation on adolescent problems' *American Sociological Review*, vol. 59, no. 3, pp. 391–407. <https://doi.org/10.2307/2095940>
- Pardo-Guerra, Juan Pablo (2022) *The Quantified Scholar: How Research Evaluations Transformed the British Social Sciences*. New York: Columbia University Press. <https://doi.org/10.7312/pard19780>
- Paschall, Katherine W; Gershoff, Elizabeth T; and Kuhfeld, Megan (2018) 'A two decade examination of historical race/ethnicity disparities in academic achievement by poverty status' *Journal of Youth and Adolescence*, vol. 47, no. 6, pp. 1164–77. <https://doi.org/10.1007/s10964-017-0800-7>
- Pelkmans, Mathijs (2009) 'The 'transparency' of Christian Proselytizing in Kyrgyzstan' *Anthropological Quarterly*, vol. 82, no. 2. <https://doi.org/10.1353/anq.0.0058>

- Phelps, Richard P (2012) 'The effect of testing on student achievement, 1910–2010' *International Journal of Testing*, vol. 12, no. 1. <https://doi.org/10.1080/15305058.2011.602920>
- Pink, Sarah and Fors, Vaike (2017) 'Being in a mediated world: self-tracking and the mind–body–environment' *Cultural Geographies*, vol. 24, no. 3, pp. 375–88. <https://doi.org/10.1177/1474474016684127>
- Pink, Sarah; Sumartojo, Shanti; Lupton, Deborah; and La Bond, Christine Heyes (2017) 'Mundane data: the routines, contingencies and accomplishments of digital living' *Big Data & Society*, vol. 4, no. 1. <https://doi.org/10.1177/2053951717700924>
- Pipho, Chris (2000) 'The sting of high-stakes testing and accountability' *Phi Delta Kappan*, vol. 81.
- van de Poel, Ibo (2021) 'Werthaltigkeit der Technik' in: Grundwald, A. and R. Hillerbrand, R (eds) *Handbuch Technikethik*, Berlin: Springer-Verlag, pp. 132–37. https://doi.org/10.1007/978-3-476-04901-8_25
- Porter, Theodore M (1995) *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton University Press. <https://doi.org/10.1515/9781400821617>
- PraktischArzt (2020) 'Medizinstudium Numerus Clausus (NC Medizin) [Medical studies numerus Clausus (NC Medicine)]' *PraktischArzt.de*. Accessed 23 November 2020. www.praktischarzt.de/medizinstudium/numerus-clausus-nc-medizin/
- Protevi, John (2014) 'Body' in: Lawlor, L and Nale, J (eds) *The Cambridge Foucault Lexicon*, Cambridge: Cambridge University Press, pp. 51–56. <https://doi.org/10.1017/CBO9781139022309.011>
- Pulfrey, Caroline; Buchs, Céline; and Butera, Fabrizio (2011) 'Why grades engender performance-avoidance goals: the mediating role of autonomous motivation' *Journal of Educational Psychology*, vol. 103, no. 3. <https://doi.org/10.1037/a0023911>
- QUA-LiS NRW (2017) *Arbeitsbereich 2 - Bildungsforschung, Evaluation und Schulentwicklung Deskriptive Beschreibung der Standorttypen für die weiterführenden Schulen [Descriptors of Site Types for Secondary Schools]*. Quality and Support Agency - State Institute for Schools. Accessed 15 March 2021. www.schulentwicklung.nrw.de/e/upload/lernstand8/download/mat_2017/2017-02-08_Beschreibung_Standorttypen__weiterfuerhrende_Schulen_NEU_RUB_ang.pdf
- Quantified Self (2022) 'Quantified Self'. Accessed 27 June 2025. <https://quantifiedself.com/>

- Quenzel, Gudrun and Hurrelmann, Klaus (2010) 'Bildungsverlierer: Neue soziale Ungleichheiten in der Wissensgesellschaft [Educational losers: new social inequalities in the knowledge society]' in: Quenzel, G and Hurrelmann, K (eds) *Bildungsverlierer*, Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 11–13. https://doi.org/10.1007/978-3-531-92576-9_1
- Rabow, Jerome; Choi, Hee-Jin; and Purdy, Darcy (1998) 'The GPA Perspective: Influences, Significance, and Sacrifices of Students' *Youth & Society*, vol. 29, no. 4, pp. 451–70. <https://doi.org/10.1177/0044118X98029004003>
- Ramseger, Jörg and Wagener, Matthea (eds) (2008) *Chancenungleichheit in der Grundschule. Ursachen und Wege aus der Krise [Inequality of Opportunity in Elementary Schools. Causes and Ways Out of the Crisis]*. Wiesbaden: VS Verlag für Sozialwissenschaften. <https://doi.org/10.1007/978-3-531-91108-3>
- Reay, Diane (2017) *Miseducation: Inequality, Education and the Working Classes*. Bristol: Policy Press. <https://doi.org/10.46692/9781447330646>
- Reay, Diane (2018) 'Diane Reay on Education and Class' *Social Sciences Bites Podcast*. Accessed 28 March 2019. www.socialsciencespace.com/2018/09/diane-reay-on-education-and-class/
- Reckwitz, Andres (2019) *Das Eigene Profil zählt. Die Gesellschaft der Einzigartigen [Your Own Profile Counts. The Society of the Unique]*. Germany: SWR 2.
- Richter, S (1996) *Unterschiede in den Schulleistungen von Mädchen und Jungen. Geschlechterspezifische Aspekte des Schriftspracherwerbs und ihre Berücksichtigung im Unterricht [Differences in the School Performance of Girls and Boys]*. Regensburg: S. Roderer Verlag. Accessed 27 June 2025. www.pedocs.de/volltexte/2020/20632/pdf/Richter_1996_Unterschiede_in_den_Schulleistungen.pdf
- Ringel, Leopold; Espeland, Wendy Nelson; Sauder, Michael; and Werron, Tobias (2021) *Worlds of Rankings*. Emerald Publishing. <https://doi.org/10.1108/S0733-558X202174>
- Ritter, J and Gründer, K (1989) *Historisches Wörterbuch Der Philosophie [Historical Dictionary of Philosophy]*. Darmstadt: Wissenschaftliche Buchgesellschaft Darmstadt. Accessed 27 June 2025. www.schwabeonline.ch/schwabe-xaveropp/elibrary/start.xav?start=%2F%2F%2A%5B%40attr_id%3D%27hwph_productpage%27%5D
- Roach, John (1971) *Public Examinations in England, 1850–1900*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511896309>
- Rohde, Noëlle (2023a) 'It's understandable if it destroys you, right? – Grades, students' self-images, and quantification' *Journal of Contemporary Ethnography*, vol. 52, no. 5. <https://doi.org/10.1177/08912416231157369>

- Rohde, Noëlle (2023b) ‘“To assign people their place in society”: school grades and the quantification of merit’ *Economy and Society*, vol. 52, no. 3. <https://doi.org/10.1080/03085147.2023.2225346>
- Rosenthal, Robert and Jacobson, Lenore (1968) ‘Pygmalion in the classroom’ *The Urban Review*, vol. 3. <https://doi.org/10.1007/BF02322211>
- RP Online (2018) ‘So viele Eltern in NRW beschwerten sich über Schulnoten [This many parents in NRW complain about school grades]’ *RP Online*. Accessed 18 August 2021. https://rp-online.de/nrw/panorama/so-viele-eltern-in-nrw-beschwerten-sich-ueber-schulnoten_aid-17796297
- Ryan, James (1991) ‘Observing and normalizing: Foucault, discipline, and inequality in schooling: BIG BROTHER IS WATCHING YOU’ *Journal of Educational Thought*, vol. 25, no. 2, pp. 104–19. <https://doi.org/10.55016/ojs/jet.v25i2.44299>
- von Saldern, M (1999) *Schulleistung in Diskussion [School Performance in Discussion]*. Hohengehren: Schneider Verlag. Accessed 27 June 2025. www.fachportal-paedagogik.de/literatur/vollanzeige.html?FId=2634735
- Saltelli, Andrea (2020) ‘Ethics of quantification or quantification of ethics?’ *Futures*, vol. 116. <https://doi.org/10.1016/j.futures.2019.102509>
- Saltelli, Andrea (2021) ‘Webinar on Ethics of Quantification’ *Centre for Science and Technology Studies, Leiden University*.
- Saltelli, Andrea; Andreoni, Antonio; Drechsler, Wolfgang; Ghosh, Jayati; Kattel, Rainer; Kvangraven, Ingrid H; Rafols, Ismael; Reinhert, Erik S; Stirling, Andrew; and Xu, Ting (2021) *Why Ethics of Quantification Is Needed Now*. London: UCL Institute for Innovation and Public Purpose. Accessed 27 June 2025. www.ucl.ac.uk/bartlett/publications/2021/jan/why-ethics-quantification-needed-now
- Saltelli, Andrea; Bammer, Gabriele; Bruno, Isabelle; Charters, Erica; Di Fiore, Monica; Didier, Emmanuel; Espeland, Wendy Nelson; Kay, John; Piano, Samuele Lo; Mayo, Deborah; Pielke, Roger; Portaluri, Tommaso; Porter, Theodore M; Puy, Arnald; Rafols, Ismael; Ravetz, Jerome R; Reinert, Erik; Sarewitz, Daniel; Stark, Philip B; Stirling, Andrew; van der Sluijs, Jeroen; and Vineis, Paolo (2020) ‘Five ways to ensure that models serve society: a manifesto’ *Nature*. <https://doi.org/10.1038/d41586-020-01812-9>
- Saltelli, Andrea and Di Fiore, Monica (2020) ‘From sociology of quantification to ethics of quantification’ *Humanities & Social Sciences Communications* vol. 7, no. 1, pp. 1–8. <https://doi.org/10.1057/s41599-020-00557-0>
- Saltelli, Andrea and Di Fiore, Monica (eds) (2023) *The Politics of Modelling: Numbers Between Science and Policy*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780198872412.001.0001>

- Sandel, Michael J (2020) *The Tyranny of Merit: What's Become of the Common Good?* London: Allen Lane.
- Sarasin, Philip (2005) *Michel Foucault zur Einführung [Michel Foucault. An Introduction]*. Hamburg: Junius Verlag.
- Sax, Gilbert (1986) 'The ethics of quantification and why it doesn't work; or life among the numerologists, inumerates, and qualitatives' *Annual Meeting of the American Educational Research Association*. Accessed 27 June 2025. <https://files.eric.ed.gov/fulltext/ED269460.pdf>
- Schinske, Jeffrey and Tanner, Kimberly (2014) 'Teaching more by grading less (or differently)' *CBE Life Sciences Education*, vol. 13, no. 2, pp. 159–66. <https://doi.org/10.1187/cbe.cbe-14-03-0054>
- Schreiber, H (1899) 'Gegen Prüfungen und Noten [Against exams and grades]' *Zeitschrift für Philosophie und Pädagogik*, vol. 6, pp. 31–38.
- Schüll, Natasha Dow (2016) 'Data for life: wearable technology and the design of self-care' *BioSocieties*, vol. 11, no. 3, pp. 317–33. <https://doi.org/10.1057/biosoc.2015.47>
- Schulte-Markwort, Michael (2016) *Burnout-Kids. Wie das Prinzip Leistung unsere Kinder überfordert [Burnout Kids. How the Principle of Performance Overtaxes Our Children]*. München: Knaur.
- Sharma, Patrick Allan (2017) *Robert McNamara's Other War: The World Bank and International Development*. Philadelphia: University of Pennsylvania Press.
- Shore, Cris and Wright, Susan (2015) 'Governing by numbers: audit culture, rankings and the new world order' *Social Anthropology*, vol. 23, no. 1. <https://doi.org/10.1111/1469-8676.12098>
- Simmank, Jakob (2018) 'Medizinstudium: so produzieren wir exzellente Ärzte, Keine guten! [Medical studies: how we produce excellent doctors, not good ones!]' *Zeit Campus*. Accessed 27 June 2025. www.zeit.de/campus/2018-12/medizinstudium-zulassung-gerechtigkeit-aerzte-staatsvert-rag-selektion
- Smallwood, Mary Lovett (1935) *An Historical Study of Examinations and Grading Systems in Early American Universities: A Critical Study of the Original Records of Harvard, William and Mary, Yale, Mount Holyoke, and Michigan from Their Founding to 1900*. Cambridge: Harvard University Press.
- Solga, Heike (2005) 'Meritokratie - Die moderne Legitimation ungleicher Bildungschancen [Meritocracy - the Modern Legitimation of Unequal Chances in Education]' in: Berger, P A and Kahlert, H (ed) *Institutionalisierte Ungleichheiten. Wie das Bildungswesen Chancen*

- blockiert*, Weinheim: Juventa, pp. 19–38. Accessed 27 June 2025. www.fachportal-paedagogik.de/literatur/vollanzeige.html?FId=3005143
- Son Hing, Leanne S; Ramona Bobocel, D; Zanna, Mark P; Garcia, Donna M; Gee, Stephanie S; and Oraziotti, Katie (2011) ‘The merit of meritocracy’ *Journal of Personality and Social Psychology*, vol. 101, no. 3, pp. 433–50. <https://doi.org/10.1037/a0024618>
- Soper, Spencer (2021) ‘Fired by bot at Amazon: “It’s you against the machine”’ *Bloomberg.com*. Accessed 23 August 2021. www.bloomberg.com/news/features/2021-06-28/fired-by-bot-amazon-turns-to-machine-managers-and-workers-are-losing-out?sref=EJ3iffSv
- Spear, M (1996) ‘The influence of halo effects upon teachers’ assessments of written work’ *Research in Education*, vol. 56, pp. 85–86. <https://doi.org/10.1177/003452379605600107>
- Stafford, Charles (2009) ‘Numbers and the natural history of imagining the self in Taiwan and China’ *Ethnos*, vol. 74, no. 1, pp. 110–26. <https://doi.org/10.1080/00141840902751238>
- Starch, D and Elliot, E C (1912) ‘Reliability of the grading of high-school work in English’ *School Review*, vol. 20, pp. 442–57. <https://doi.org/10.1086/435971>
- Starch, D and Elliot, E C (1913) ‘Reliability of grading work in mathematics’ *School Review*, vol. 21, pp. 245–59. <https://doi.org/10.1086/436086>
- Stark-Watzinger, Bettina (2022) ‘Mit bester Bildung Lebenschancen schaffen [Creating life chances with the best education]’ *Freie Demokraten, FDP Online*. Accessed 1 February 2022. www.fdp.de/mit-bester-bildung-lebenschancen-schaffen
- Stiles, Ezra (1786) *The Literary Diary of Ezra Stiles*. Vol. III.
- Stobart, Gordon (2008) *Testing Times: The Uses and Abuses of Assessment*. <https://doi.org/10.4324/9780203930502>
- Stohl, Cynthia; Stohl, Michael; and Leonardi, Paul M (2016) ‘Managing opacity: information visibility and the paradox of transparency in the digital age’ *International Journal of Communication*, vol. 10, no. 123–37. <https://ijoc.org/index.php/ijoc/article/view/4466/1530>
- Storeng, Katerini T and Béhague, Dominique P (2017) “‘Guilty until proven innocent”: the contested use of maternal mortality indicators in global health’ *Critical Public Health*, vol. 27, no. 2. <https://doi.org/10.1080/09581596.2016.1259459>
- Stoskopf, Alan (1999) ‘An untold story of resistance. African-American educators and IQ testing in the 1920’s and ‘30’s’ *ReThinking Schools*, vol.

- 14, no. 1. Accessed 27 June 2025. <https://rethinkingschools.org/articles/an-untold-story-of-resistance/>
- Strathern, Marilyn (1997) ‘“Improving ratings”: audit in the British university system’ *European Review*, vol. 5, no. 03, p. 305. [https://doi.org/10.1002/\(sici\)1234-981x\(199707\)5:3%3C305::aid-euro184%3E3.0.co;2-4](https://doi.org/10.1002/(sici)1234-981x(199707)5:3%3C305::aid-euro184%3E3.0.co;2-4)
- Strathern, Marilyn (2000a) *Audit Cultures: Anthropological Studies in Accountability, Ethics, and the Academy*. London: Routledge.
- Strathern, Marilyn (2000b) ‘The tyranny of transparency’ *British Educational Research Journal*, vol. 26, no. 3, pp. 309–21. <https://doi.org/10.1080/713651562>
- Stray, Christopher (2001) ‘The shift from oral to written examination: Cambridge and Oxford 1700–1900’ *Assessment in Education: Principles, Policy and Practice*, vol. 8, no. 1. <https://doi.org/10.1080/09695940120033243>
- Sullivan, Alice (2002) ‘Bourdieu and education: how useful is Bourdieu’s theory for researchers?’ *The Netherland’s Journal of Social Sciences*, vol. 38, no. 2, pp. 144–66. Accessed 27 June 2025. <http://profalices.co.uk/wp-content/uploads/2021/03/Bourdieuunetherlandsjournal.pdf>
- Tsoukas, Haridimos (1997) ‘The tyranny of light’ *Futures*, vol. 29, no. 9, pp. 827–43. [https://doi.org/10.1016/S0016-3287\(97\)00035-9](https://doi.org/10.1016/S0016-3287(97)00035-9)
- Türkoğlu, I; İlgaz, F; Açıkgöz, A; Melekoğlu, E and Fisunoğlu, M (2018) ‘The effect of academic examination stress on dietary intake and physical activity in university students’ *Clinical Nutrition*, vol. 37, no. 1. <https://doi.org/10.1016/j.clnu.2018.06.1442>
- UK Select Committee on Education and Skills (2003) *The Background to the A-Levels Debate*. Accessed 15 March 2021. <https://publications.parliament.uk/pa/cm200203/cmselect/cmeduski/153/15304.htm>
- Ulbricht, H (1949) ‘Zur Beurteilung von Reifeprüfungsaufsätzen [On the assessment of maturity test essays]’ *Der Deutschunterricht*, vol. 1, pp. 84–102.
- Ullrich, Heiner and Wöbcke, Manfred (1981) *Notenelend in der Grundschule. Alternative Beurteilungsformen für die Praxis [Grade Misery in Elementary School. Alternative Forms of Assessment for Practice]*. München: Kösel-Verlag.
- United Nations (2021a) ‘Act Now. The UN Campaign for Individual Action’ Accessed 1 December 2021. www.un.org/en/actnow

- United Nations (2021b) 'Sustainable Development Goals. 4: Quality Education' Accessed 1 December 2021. www.un.org/sustainabledevelopment/education/
- Vieth-Entus, Susanne (2016) 'Antonia, 900 Punkte - Berlins Beste Abiturientin [Antonia, 900 Points - Berlin's Best High School Graduate]' *Der Tagesspiegel*. Accessed 15 March 2021. www.tagesspiegel.de/berlin/abitur-2016-in-berlin-antonia-900-punkte-berlins-beste-abiturientin/13899746.html
- Vilaça, A (2021) 'A pagan arithmetic: unstable sets in indigenous Amazonia,' *Interdisciplinary Science Reviews*, vol. 46, no. 3, pp. 304–324. <https://doi.org/10.1080/03080188.2020.1834723>
- Vormbusch, Uwe (2012) *Die Herrschaft der Zahlen. Zur Kalkulation des Sozialen in der kapitalistischen Moderne [The Rule Of Numbers. On the Calculation of the Social in Capitalist Modernity]*. Frankfurt/Main: Campus.
- Waldow, Florian (2011) 'Juristen oder Testspezialisten? Zur Rolle von Experten bei der Herstellung von Notengerechtigkeit in Deutschland und Schweden [Lawyers or test specialists? On the role of experts in establishing grade equity in Germany and Sweden]' *Zeitschrift Für Pädagogik*, vol. 57, no. 4, pp. 484–96. <https://doi.org/10.25656/01:8742>
- Wengraf, Tom (2001) *Qualitative Research Interviewing : Biographical Narrative and Semi-Structured Methods*. Thousand Oaks, CA: SAGE.
- Whittaker, Gwendolyn (2013) *Überbürdung – Subversion – Ermächtigung. Die Schule und die literarische Moderne 1880–1918 [Overburdening - Subversion - Empowerment. The School And Literary Modernity 1880–1918]*. Vandenhoeck & Ruprecht Verlage. <https://doi.org/10.14220/9783737000956>
- Wiederkehr, Virginie; Darnon, Céline; Chazal, Sébastien; Guimond, Serge and Martinot, Delphine (2015) 'From social class to self-efficacy: internalization of low social status pupils' school performance' *Social Psychology of Education*, vol. 18, no. 4, pp. 769–84. <https://doi.org/10.1007/s11218-015-9308-8>
- Williamson, Timothy (2002) *Knowledge and Its Limits*. Oxford: Oxford University Press. <https://doi.org/10.1093/gmo/9781561592630.article.O004417>
- Willis, Paul E (1977) *Learning to Labour: How Working Class Kids Get Working Class Jobs*. Farnborough: Saxon House.
- Wolff, Robert Paul (1969) 'A Discourse on Grading' in: Curren, R (ed) *Philosophy of Education: An Anthology*, Oxford: Blackwell, pp. 459–64

- Yankelovich, Daniel (1972) *Corporate Priorities: A Continuing Study of the New Demands on Business*. Stanford: Yankelovich Inc.
- Zagzebski, Linda Trinkaus (1996) *Virtues of the Mind: An Inquiry Into the Nature of Virtue and the Ethical Foundations of Knowledge*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781139174763>
- Zaru, Deena (2017) 'How Heidi Klum Responded When Donald Trump Said She's No Longer a 10' *CNN Politics*. Accessed 18 August 2021. <https://edition.cnn.com/2015/08/18/politics/donald-trump-heidi-klum-no-longer-a-ten/index.html>
- Ziegenspeck, Jörg W (1973) *Zensur und Zeugnis in der Schule. Darstellung der allgemeinen Problematik und der gegenwärtigen Tendenzen [Grades and Report Cards in School. Presentation of the General Problems and Current Tendencies]*. Hannover: Hermann Schroedel Verlag KG.
- Ziegenspeck, Jörg W (1999) *Handbuch Zensur und Zeugnis in der Schule. Historischer Rückblick, allgemeine Problematik, empirische Befunde und bildungspolitische Implikationen. [Handbook Grades And Reports In School. Historical Review, General Problems, Empirical Findings]*. Bad Heilbrunn/Obb.
- Ziegler, Holger and Gropp, Regina (2015) *Factsheet: Bepanthen-Kinderförderung. Stress-Studie 2015: Burn-Out Im Kinderzimmer: Wie Gestresst Sind Kinder Und Jugendliche in Deutschland? [Burn-out in the Children's Room: How Stressed Are Children and Adolescents in Germany?]*. Bayer Vital GmbH. Accessed 27 June 2025. www.bepanthen.de/sites/g/files/vrxlpx36091/files/2021-01/08_factsheet_stress_studie_2015.pdf
- Zielinski, Johannes (1961) 'Macht Und Ohnmacht Der Zensuren [The Power And Powerlessness Of Grades]' *Pädagogische Rundschau* vol. 15, no. 1, pp. 121–42.
- Zuboff, Shoshana (2019) *The Age of Surveillance Capitalism: The Fight for the Future at the New Frontier of Power*. London: Profile Books.

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There are few things left on Earth that people have not attempted to measure. From temperature to time, from finances to football, numbers are a crucial mediator of how we perceive and understand the world we live in. Increasingly, however, it is humans themselves who are the subject of quantification. Our fitness and success, even our personality traits and attractiveness, are now the stuff of scales and scores. But what does it do to us to be on the receiving end of such measurement?

One of the world's most successful global metrics is the school grade. Long predating the digital age, educational marks can be traced back at least to 16th-century European schools and have since conquered the world, becoming the indicator of academic achievement.

To understand what it means to be quantified, Noëlle Rohde undertook in-depth fieldwork in a German comprehensive school where students receive more than 100 grades per year. By staying close to the pupils as they are continually examined and assessed, her ethnography illustrates how marks mould students' self-images, how they enforce meritocratic thinking and serve as a potent disciplinary tool. *Marked: School Grades and the Quantified Life* not only offers a nuanced account of the effects of grades on students, but also tells a cautionary tale of the increasing quantification of human life.



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